'57

MODERN TEXTILES

MAGAZINE

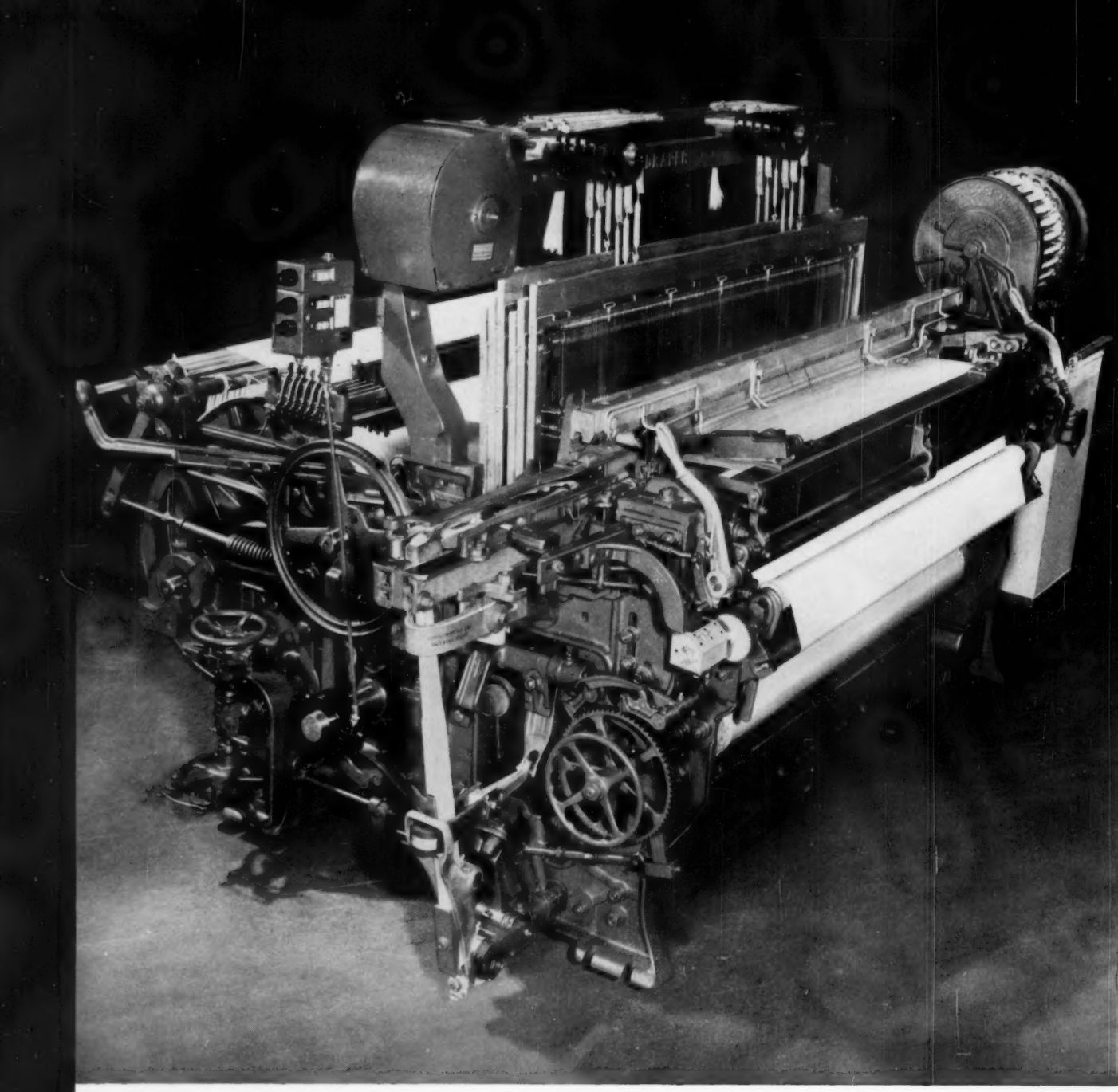
Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES

Hoffner Rayon's Joe Hoffner -- one of five hard-working sons of a hard-working father — *Story page 33*



This loom gives you all the competitive advantages

Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

The changing fashions in cotton and synthetics create a need for a loom which can be converted on short notice to weave a wide variety of fabrics.

The X-2 with its ability to weave cottons or synthetics equally well, answers this conversion problem.

The combined advantages of the Draper X-2 mean . . . higher mill profits.

DRAPER CORPORATION

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*

THIS EMBLEM SIGNIFIES *Quality and Service*

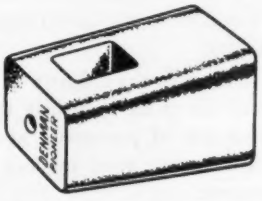
THIS NAME **Denman**

IDENTIFIES THE ORIGINAL PIONEER

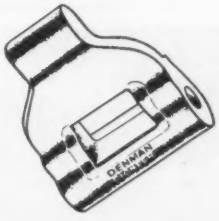
LOOM PARTS

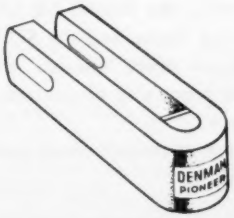
DENMAN PIONEER LOOM PARTS HAVE SERVED THE TEXTILE INDUSTRY FOR OVER 20 YEARS WITH SCIENTIFICALLY DESIGNED AND ENGINEERED LOOM PARTS OF SURPASSING STRENGTH, RESILIENCY AND PERFORMANCE!

DENMAN PIONEER REGULAR PICKER

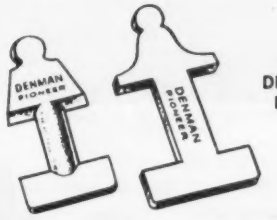


DENMAN PIONEER DROP BOX REVERSIBLE PICKER





DENMAN PIONEER LUG STRAP



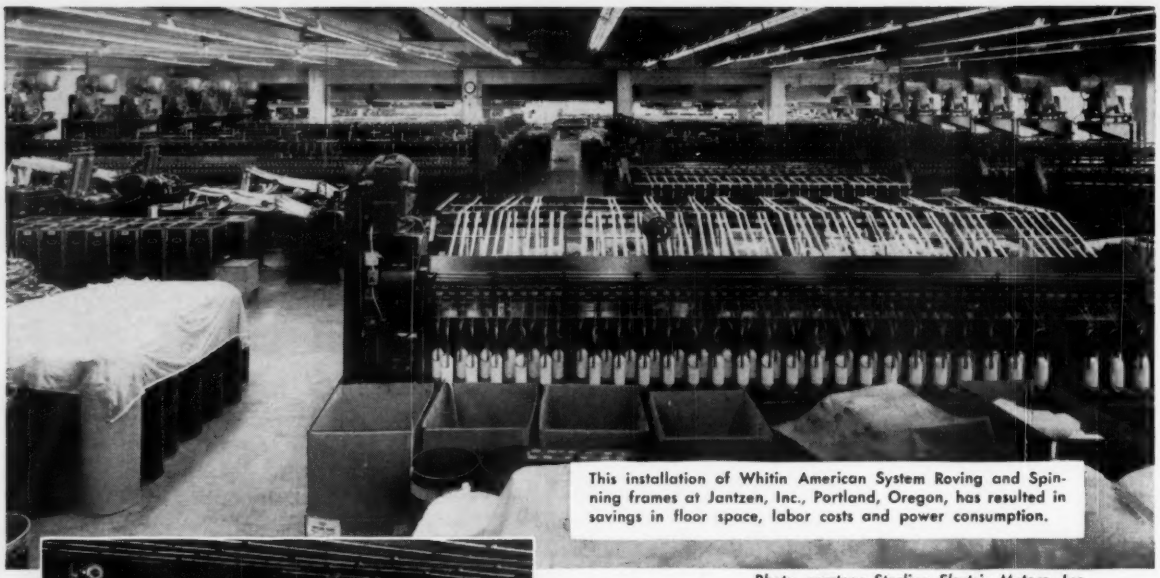
DENMAN PIONEER HOLD-UP STRAP

Representatives Throughout The World . . . Write

DENMAN TEXTILE RUBBER COMPANY

2828 Second Street • Cuyahoga Falls, Ohio

NEW YORK • PHILADELPHIA • CHARLOTTE, N.C.



This installation of Whitin American System Roving and Spinning frames at Jantzen, Inc., Portland, Oregon, has resulted in savings in floor space, labor costs and power consumption.

Photo courtesy Sterling Electric Motors, Inc.

Are you keeping machinery *that can't earn its "Keep"?*

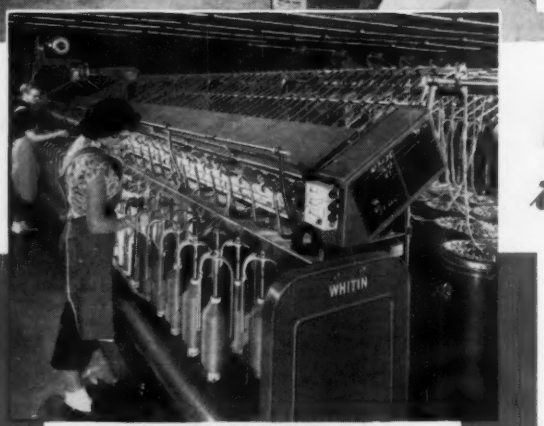
...then you're losing the Profit Potential of WHITIN AMERICAN SYSTEM EQUIPMENT

The policy of harboring old out-dated equipment on the premise that it has a "few good years left in it" is dangerous! Regardless of how it may be *hidden* in the cost sheets, machinery that is not competitive is a liability!

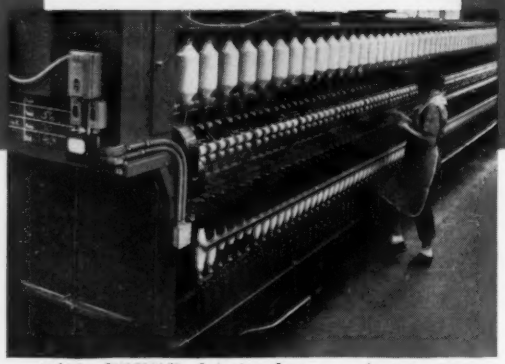
Leaders in the industry — world-famous mills like Jantzen are quick to realize this. In the keenly competitive task of processing fibers for profit, they seek out the latest, most modern and most competitive equipment.

For production, quality, ease of maintenance and simplicity of operation, Whitin American System machinery — the ROTO-DRAFTER, the QUIK-SET Roving frame and the SUPERFLEX Spinning frame — offers unusual competitive advantages in the processing of worsted, synthetic and blended fibers.

To make your operation more profitable — make it Whitin!



Whitin 10" x 5" QUIK-SET Roving frames at Jantzen, Inc.



Whitin SUPERFLEX Spinning frames at Jantzen, Inc.

Photos courtesy Jantzen, Inc.

The Jantzen Diving Girl — world famous symbol of quality on all Jantzen sportswear

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASS.

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

MODERN
TEXTILES MAGAZINE

November, 1957 Vol. 38, No. 11

Modern Textiles Magazine
Established 1925

* * *

Published Monthly by
Rayon Publishing Corporation
303 Fifth Ave., New York 16, N. Y.
MUrray Hill 4-0455

* * *

Francis A. Adams ..... *Chairman of the Board*
Alfred H. McCollough ..... *President*
Harvey J. Williams ..... *Vice President*
John E. D. Coffey ..... *Vice President*
Harries A. Mumma ..... *Treasurer and Secretary*

* * *

Alfred H. McCollough ..... *Publisher*
Jerome Campbell ..... *Editor*
H. George Janner ..... *Managing Editor*
Robert C. Shook ..... *Contributing Editor*
B. Mori ..... *Contributing Editor*
Joseph Failat ..... *Art Direction*
Harvey J. Williams ..... *Business Manager*
R. A. Lipscomb ..... *Business Representative*
C. E. Peck, Jr. ..... *Business Representative*
William Walters ..... *Business Representative*
Gordon B. Ewing ..... *Business Representative*
Stanley A. Ehresman ..... *Circulation Manager*
I. A. Price ..... *Asst. Circulation Manager*

* * *

Subscription Rates: North and South America and U. S. Possessions, one year $5.00; all other countries, one year, $8.00. Postage prepaid by the publisher. Single copies (current issue), 60 cents.

BPA

Member of
Business Publications Audit of Circulation, Inc.

Entered as second-class matter at the Post Office, Manchester, N. H. Editorial and Circulation offices at 303 Fifth Avenue, New York 16, N. Y. Publication offices at 215 Canal Street, Manchester, N. H.

(Originally entered as second-class matter at the Post Office, New York, N. Y. August 20, 1925).

* * *

Contents copyright 1957 by Rayon Publishing Corporation. All rights reserved. Articles may be reprinted with the written permission of the publisher, if credit is given to Modern Textiles Magazine.

* Registered U.S. Pat. Office.

CONTENTS

Publisher's Viewpoint

The Importance of BISFA 31

Features

A Family Business in Textiles 33
by Jerome Campbell

Lofted Acetate in Carpets 35
by W. I. Langstaff, E. J. Nickerson & L. P. Hoskins

First Fluid Bed Dryer 39
by K. R. Draw

What Fluid Beds Can Do 45

How to Finish Orlon Blankets 50
by K. D. Houser and L. Bidgood, Jr.

AATCC 36th Annual Convention 58

New Fiber Shapes 70

AATT Papers

How Ford Buys Auto Fabrics 81
by E. Zagiel

The Principal Trade Groups

Man-Made Fiber Producers Association ..... Empire State Bldg., New York
National Federation of Textiles, Inc. ..... 389 Fifth Ave., New York
American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technoloy, Inc. ..... 100 W. 55th St., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 F. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York
American Rayon Institute ..... 350 Fifth Avenue, New York

Departments

Outlook in Textile Marketing—Robert C. Shook 32
Report from Europe 56
New Machinery—New Equipment 62
New Fabrics—New Yarns 72
TDI News and Comments 73
Report from Japan—B. Mori 74
Yarn Prices 85
Dyeing and Finishing Notes 87
Textile News Briefs 95
Calendar of Coming Events 104
Advertisers Index 104

Fiber Prices Increased

Rayon staple and other fiber price increases have been posted, generally reflecting higher labor, raw material and freight costs. New prices recently announced follow:

American Viscose Corp.: regular staple, 31 cents a pound; fine denier crimped staple, 32 cents. Prices of other special types of rayon staple are unchanged.

Courtaulds (Alabama) Inc.: regular bright and dull rayon staple, 31 cents a pound; crimp staple in 3 and 5½ denier, 32 cents.

Hartford Rayon Co.: Viscalon 66, crimped white staple in 8 and 15 denier, 35 cents a pound. Prices of Kolorbon, solution-dyed staple in 8 and 15 denier, are unchanged.

Chemstrand Corp.: Acrilan staple, 2 denier, $1.24 a pound; 3, 5 and 8 denier, $1.16; 15 denier, $1.01.

Union Carbide Chemicals Co.: natural dynel acrylic fiber, 3, 6 and 12 denier staple and tow, $1.10; 24 denier, $1.05. Dynel spun with light colors, 3, 6 and 24 denier, staple and tow, $1.30. Dynel spun with dark colors, 3, 6 and 24 denier, staple and tow, $1.40. Dynel type 63 bulking fiber (3 denier only), add five cents a pound to above prices. Prices are f.o.b. South Charleston, W. Va.

Darlan Fiber Expansion

Expansion of the existing semi-works facilities for the production of Darlan dinitrile fiber at the Avon Lake Development Center of B. F. Goodrich Chemical Co. has been announced by the company. Completion of the program, slated for early 1958, will triple the existing facilities. The company said the primary purposes of the expansion are to provide additional quantities of the new textile fiber for an accelerated market evaluation program and to obtain additional design data for possible production units.

New Creslan Showroom

The Fibers Division of American Cyanamid Co. has leased a full floor of the air-conditioned office building now under construction at 111 W. 40th St., New York, for use as sales and showroom facilities for the new Creslan acrylic fiber. W. L. Lyall, Jr., general sales manager of the division, will head the office. A. R. Loosli, division general manager, will maintain offices in American Cyanamid headquarters at 30 Rockefeller Plaza and at the new address.

Bulked Yarn Process

Deering Milliken Research Corp. has announced a process for producing a modified stretch or bulked yarn by post-treatment through heat of crimped yarns. The process, said to be applicable to the modification of Agilon, Helanca, Ban-Lon, Fluflon and Superloft yarns, and stretch or bulked yarns produced by other processes, constitutes a partial development of the crimped yarn to produce desirable bulked properties making the yarn suitable for use in the production of sweaters, jerseys and woven dress fabrics. *For further information write the editors.*

Synthetic Fiber Proteins

British fiber scientists are working on the development of synthetic proteins, known as polypeptides, according to a report from Manchester, England. While it was pointed out these fibers are still a long way from commercial application, fiber scientists expect the next major advance in synthetic fiber production to be in the protein field. A good deal of the work has been carried out at the fundamental research laboratories of Courtaulds, Ltd., at Maidenhead, England. A fiber has been produced which is said to be close to real silk.

The word for rayon

HARTFORD

the symbol of dependability

Count on Hartford for a wide range of the finest rayon fiber staple. Count on Hartford for on-time service . . . a thoroughly dependable source of supply.

- Solution-dyed heavy denier crimped rayon staple KOLORBON†
- White heavy denier crimped rayon staple . . . . VISCALON 66†
- White heavy denier "smooth" rayon staple . . . VISCALON 44
- White fine denier regular rayon staple . . . . . VISCALON 22

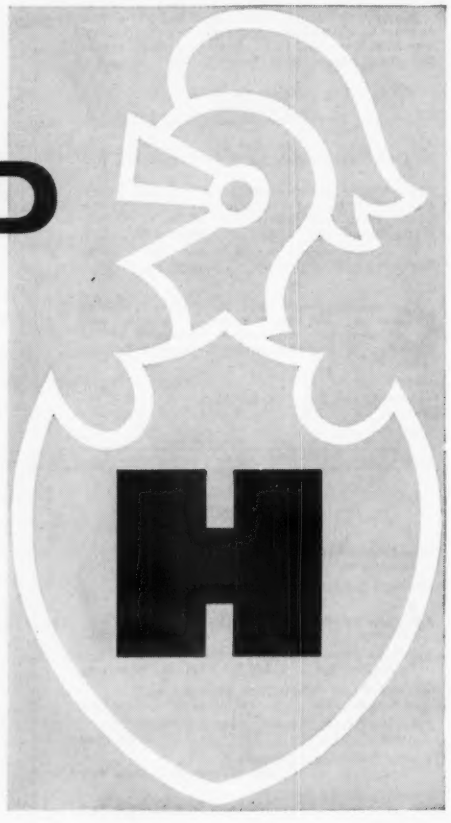
†Available in both 3" and 6" lengths

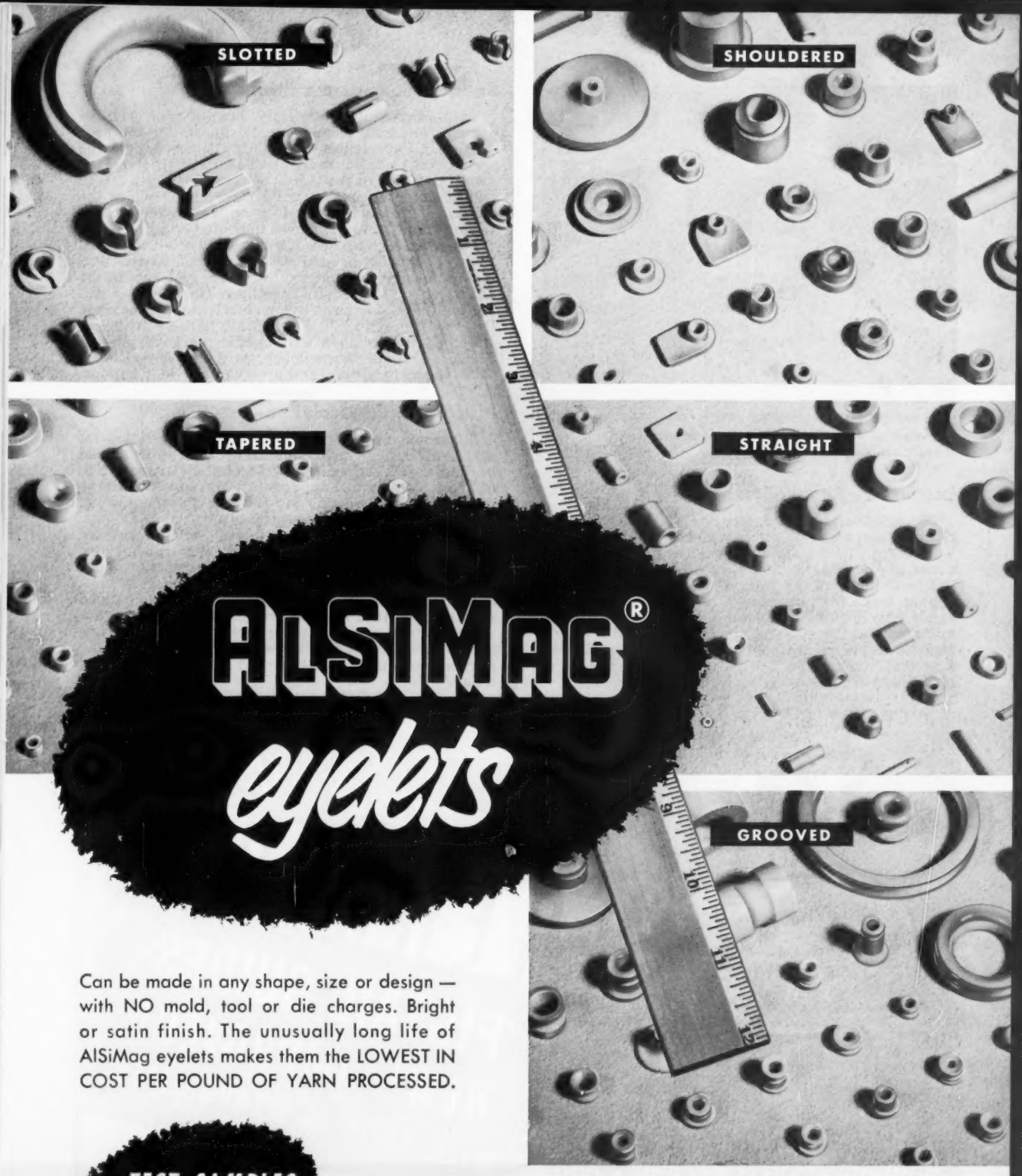
HARTFORD RAYON COMPANY

136 Madison Avenue, New York City

Southern Sales Office: Atlanta, Georgia

The country's leading producer of solution-dyed rayon staple





AlSiMag® eyelets

Can be made in any shape, size or design — with NO mold, tool or die charges. Bright or satin finish. The unusually long life of AlSiMag eyelets makes them the LOWEST IN COST PER POUND OF YARN PROCESSED.

TEST SAMPLES AVAILABLE

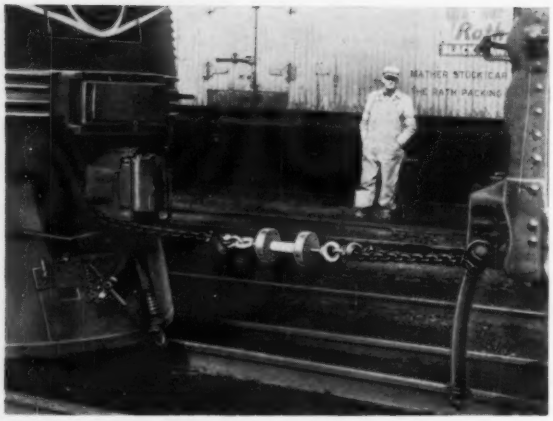
56TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

A Subsidiary of Minnesota Mining and Manufacturing Company

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: NEW ENGLAND: W. J. Geary, 27 Fairlawn St., Cranston, R. I., Williams 1-4177. NORTHEAST: J. S. Gosnell, 205 Walnut St., Livingston, N. J., 6-1260. NORTH CENTRAL: Minnesota Mining & Mfg. Co., 367 Grove St., St. Paul 1, Minn., Cedar 3071. NORTHWEST: Minnesota Mining & Mfg. Co., 320 Shaw Road, S. San Francisco 10, Cal., Plaza 6-0800. SOU. CAL.: W. L. Thompson, 6023 South Garfield Ave., Los Angeles 22, Cal., Raymond 3-6641. SOUTH CENTRAL: Minnesota Mining & Mfg. Co., 1221 Dragon St., Dallas 2, Texas. SOUTHEAST: James W. Crisp, Poinsette Apts., No. 2C, Greenville, S. C., 5-4172. ALL OTHER AREAS: J. B. Shacklett, American Lava Corp., Chattanooga 5, Tennessee, Amherst 5-3411. REPRESENTATIVES: CANADA: Ian M. Haldane & Co., P. O. Box 54, London, Ont. ALL OTHER COUNTRIES: Minnesota Mining & Mfg. Co., International Div., St. Paul 6, Minn.



NO SNAP HERE—This Lestershire bobbin successfully withstood the full weight of 18 freight cars when it was used as a link in the towing chain as shown above.

Lestershire Bobbin Strength

The outstanding tensile strength and other superior physical properties of vulcanized fiber of the National Vulcanized Fibre Co. were demonstrated recently in a test at the Wilmington, Del., yards of the B & O Railroad, the company reported. A Lestershire textile bobbin, made with heads of National vulcanized fiber and a barrel of hard northern maple, was shackled into a special test harness and made to pull a freight train. The 1¼-pound bobbin held under a pull pressure that started the 735,700-pound dead weight of 18 railroad freight cars rolling down the tracks.

Form U. S. Papertex Firm

Snia Viscosa of Milan, Italy, has set up a wholly-owned American subsidiary, Resinova, for the production of Papertex in this country. Nylon 6, nylon 66 and nylon 11 have been used in Italy in Papertex production but in the U.S. it is planned to use 30, 45 and 60 denier nylon made by Du Pont. Price of the American product, depending on weight, could run from around $1 to $2, it was indicated.

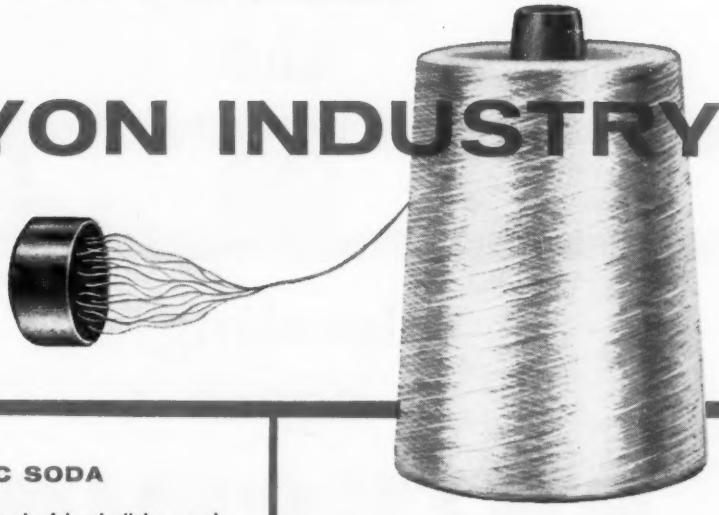
Papertex is composed of a light nylon fabric coated with chemically bonded acrylic resins. Resinova is making a survey to determine further end uses in the American market. Schwarzenbach Huber Co. is experimentally weaving nylon fabrics at Allentown, Pa., for this product, which initially will be coated in Italy. Later, Resinova will handle the coating here. Plans call for Schwarzenbach and General Aniline & Film Corp. to share in the ownership of Resinova.

Machinery Depreciation

Suggested Federal tax depreciation schedules for textile machinery in woolen and worsted mills should be liberalized, according to the National Association of Wool Manufacturers. The Internal Revenue Service has been reviewing its Bulletin F schedules of useful lives of depreciable property.

NAWM cited two reasons why woolen-worsted mill machinery was having a shorter, useful life: 1—intensity of operation of most machinery has been increasing steadily since the last IRS review in 1942, and 2—the variety of raw materials has expanded greatly since 1942 and has triggered concomitant developments in manufacturing technology, dyeing and finishing, and that "an allowance for 'normal obsolescence' adequate in 1942 would be quite inadequate today."

SOLVAY® CHEMICALS FOR THE RAYON INDUSTRY



CAUSTIC SODA

STEEPING OF PULP—Removal of hemicellulose and other impurities from the pulp.

DISSOLVING—Dissolving of Xanthated cellulose.

BLEACHING—Preparation of sodium hypochlorite for bleaching.

WATER SOFTENING—Precipitating hardness salts from water.

MINIMIZING AIR POLLUTION—Scrubbing ventilating air effluent to remove sulphur compounds.

SODA ASH

BLEACHING—Preparing sodium hypochlorite for bleaching.

WATER SOFTENING—Precipitating hardness salts.

HYDROGEN PEROXIDE

BLEACHING—Brightening the rayon yarn.

ORTHODICHLOROBENZENE

REDUCING ODOR POLLUTION—Injecting into ventilating air to reduce pollution.

SODIUM BICARBONATE

pH ADJUSTING—Adjusting pH of sodium hypochlorite for bleaching.

SOLVAY®

SOLVAY PROCESS DIVISION

ALLIED CHEMICAL & DYE CORPORATION

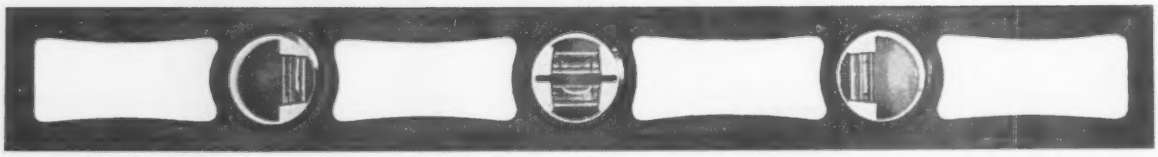
Allied Chemical

61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

an efficient wool dyeing auxiliary and



leveling agent

ANTHOMINE®

Anthomine achieves a full shade in dyeing tippy and blended wool.

Thousands of pounds of Anthomine have enabled U.S. and Canadian mills, in the past ten years, to meet rigid government specifications in the dyeing of wool for military fabrics.

It possesses good softening qualities, leaving the wool with a very pleasing, rich hand, of special value in strong acid dyeing which otherwise would harshen the fibers.

Anthomine also provides excellent exhaustion of the dyebath and speeds up dyeing operation.

Because of its cationic nature, many mills add Anthomine to wool oil to eliminate static on the cards.

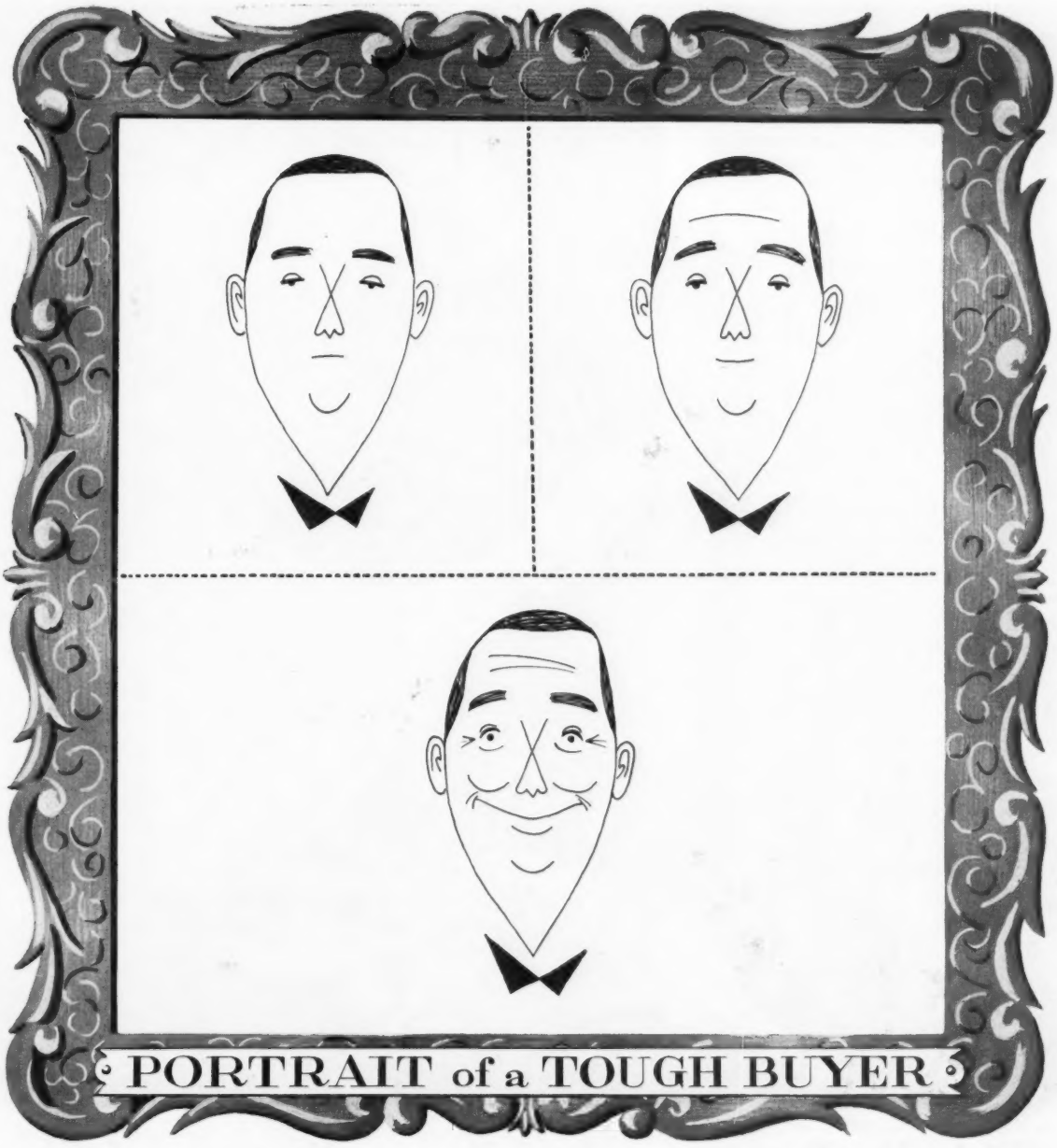
Ask your Arkansas representative for full details, or write for Technical Service Bulletin.

AC INC.®

ARKANSAS CO., INC.

Serving the Textile Industry for over 50 Years

NEWARK, NEW JERSEY



...Being Introduced to Bemberg Novelty Yarns!

The textile industry has cried "wolf" too often. Only in this case the word is "new"!

Buyers who have been assailed by the "new look," the "new touch," and the "new performance" so many times (with nothing to back up the words) tend to remain congealed!

O.K., you tough buyers . . . mill men, converters, retailers . . . here comes a challenge . . . something new that's really new!

Bemberg announces new developments in novelty yarns. Famous Cupioni . . . the record-smashing shantung-type rayon yarn . . . now in a new heavier denier. Flaikona† . . . America's only continuous filament flake yarn. Nub-lite† . . . an intriguing nubby effect. Strata†, an unusual thick-and-thin. Cupracolor† solution-dyed novelty yarns . . . and many, many others.

All team up with cotton, silk, rayon, acetate, or the newer synthetics for a priceless combination of style, serviceability, and foolproof practicality.

Call LExington 2-3520 and make a date. This time "new" means what it says!

Bemberg®
ARISTOCRAT OF RAYON YARN

†Reg. app. for

AMERICAN BEMBERG • Main Office: 261 Fifth Avenue, New York 16, N.Y. • Plant: Elizabethton, Tennessee.

No. 2 in a Series—how your Du Pont salesman is backed by many sales-building activities including Fiber Research, Technical Service, Fabric Development and Merchandising.

This Du Pont merchandiser sells tons of fiber

Here in Du Pont's Women's Wear Fabric Room, Myra Kelley, a Du Pont merchandising representative, points out to David Schwartz, president of Jonathan Logan, the contributions Du Pont fibers make to the season's newest fabrics.

In these unique combinations of textile libraries and showrooms (there are men's wear and home furnishings fabric rooms, too), over 5,000 samples are catalogued seasonally.

The single purpose of these rooms in the Empire State Building is to tell retailers, cutters and fashion editors the advantages that Du Pont's modern-living fibers are bringing to today's most exciting market fabrics. Here is created an extra trade excitement that makes for better business for Du Pont customers as a whole. With these showrooms off limits to

FROM RAW FIBERS TO RETAIL SALES . . .

but never writes an order

millmen and converters, each exhibiting mill's individual interest is rigorously protected.

Du Pont merchandising representatives have wide contacts at all levels of the trade. They promote new concepts and ideas that stem from Du Pont's modern-living fibers, bring back market reactions that aid in making your Du Pont salesman the best informed in the industry. This helps you and Du Pont anticipate new demands, plan broader markets.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont salesman that you, as a customer, have access to a range of technical and merchandising information unique in the textile industry.

Product and Process Notes from Du Pont

Color-Sealed Black—Now the rich, clear black of Du Pont's color-sealed nylon yarn is available in 40 denier as well as 70, 100, 200 and 260 denier. Dresswear, blouses, lingerie, sportswear, hosiery and upholstery are a few of the countless applications of these bright BLACK nylon yarns with the color sealed into the fiber.

New Bleaching Method for "Orlon"*— A simple method has been developed for bleaching the new, whiter, more dyeable "Orlon" to an excellent white of improved stability. Bleaching is accomplished by treating the fabric or garments at the boil in a bath containing formic acid and a detergent. Additional whitening can be obtained by application of a fluorescent white dye and a minute amount of blue dye in the same bath.

Improved Packaging—50, 70, 140, 200 and 210 denier nylon yarn is now available on 5-lb. draw-wound tubes. Advantages of this package are elimination of pirn taper barré, more uniform shrinkage—resulting in more uniform dyeing and fabric-width uniformity. Reduction in creel stocking frequency results in labor savings. This package is suitable for broad woven fillings of zero twist yarn, certain bulk and stretch yarns, plied yarns and tape reinforcement.

Technical Information Bulletins—contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing and finishing. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need, check your Du Pont salesman or Technical Service representative.

*Du Pont's registered trademark for its acrylic fiber.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING

. . . THROUGH CHEMISTRY

DU PONT BUILDS PROFITS FOR YOU

PRODUCTS
SERVICE
Setting the pace...
Aridye
COLORS
Aquaprint
COLORS

Aridye-Aquaprint YELLOWS

for Fast-Color Printing

Whether you're printing cottons, synthetics, or blends, you'll find an Aridye or Aquaprint Yellow that fits your needs.

Yellow 2R is an example. There is no other color like it! The pigment employed was developed by Interchemical Research. It is available in both the Aridye and Aquaprint Series.. Yellow 2R is now being used more and more by leading printers. On cottons and synthetics, it produces bright yellows . . . is useful in blends.

Important properties of Yellow 2R and other Aridye and Aquaprint Yellows are charted below.

For samples and full information on this outstanding range of Yellows for fast-color printing, simply fill in and mail the coupon now.

Color	Light	Washing (A.A.T.C.C. No. 4 Test)	Drycleaning Carbon Tetra-chloride	Drycleaning Perchlor-ethylene	Suitability for Plisse	Discharge Printing (Aridye 400 Series Only)	Remarks
Chartreuse	★	★	★	★	★		Greenish yellow with outstanding fastness. Especially useful in blends.
Yellow 2G	●	★	★		★	★	Most widely used yellow for printing dress goods and other washable fabrics.
Yellow 3G	●	★	★	★	★	★	Lemon yellow with better fastness to light and drycleaning than Yellow 2G.
Yellow K	★		★	★	★		Mustard yellow for producing prints with maximum fastness to light and drycleaning.
Yellow R	★		★	★			Bright reddish yellow with excellent fastness to light and drycleaning.
Yellow 2R	●	★			★	★	Bright reddish yellow widely used in blends for blotch printing. Has better lightfastness than Yellow 2G.
Golden Yellow RF	●	★	★	★	★	★	Bright golden yellow with outstanding properties. Has better lightfastness than Yellow 2G.

★ outstanding fastness ● meets normal dress goods requirements Tests conducted in accordance with A.A.T.C.C. Standard Methods

Interchemical CORPORATION *Textile Colors Division*

Pawtucket, R.I. HAWTHORNE, N.J. Rock Hill, S.C.

Interchemical Corporation, Textile Colors Division, Hawthorne, N. J.

Please send me samples and complete information on the Aridye and/or Aquaprint Yellows checked below:

ARIDYE

☐ Chartreuse ☐ Yellow 2G ☐ Yellow 3G
☐ Yellow K ☐ Yellow R ☐ Yellow 2R
☐ Golden Yellow RF

AQUAPRINT

☐ Chartreuse ☐ Yellow 2G ☐ Yellow 3G
☐ Yellow K ☐ Yellow R ☐ Yellow 2R
☐ Golden Yellow RF

NAME_____

COMPANY NAME_____

STREET_____

CITY_____ **ZONE**____ **STATE**_____

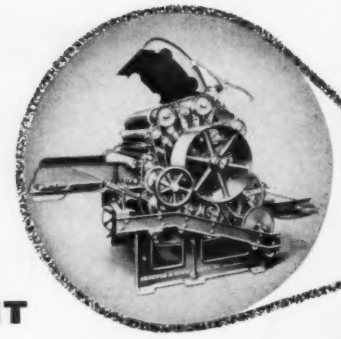
NON-WOVEN FABRICS

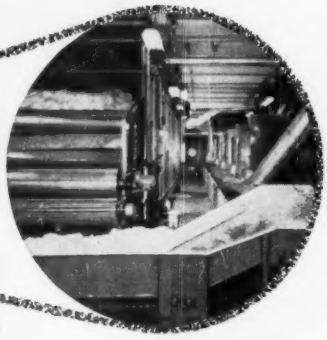
FROM BALE TO FABRIC

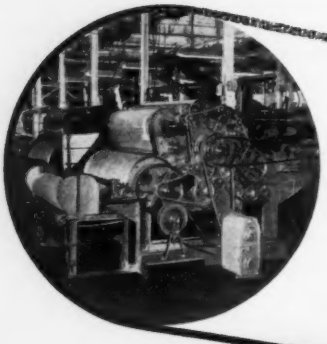
WITH

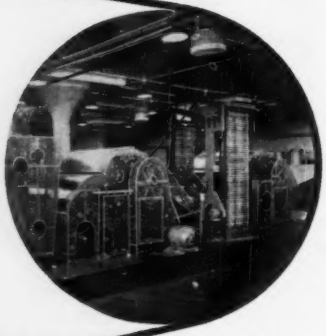
Proctor®

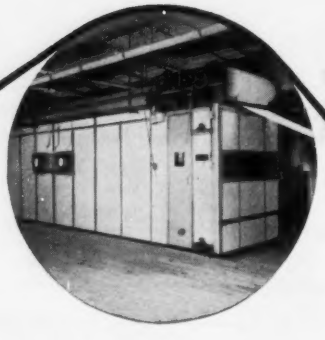
EQUIPMENT

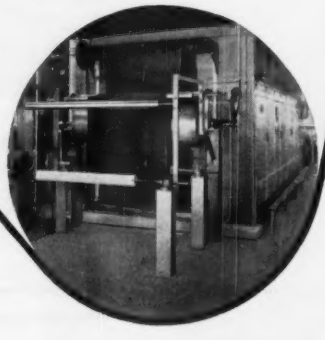












Successful non-woven fabric manufacturers today recognize the garnett as the prime web forming apparatus for making top quality non-woven fabrics without sacrificing high production. By choice of type or arrangement of these garnetts, a complete range of non-wovens can be made, that is, parallel fiber array, cross lapped, or isotropic.

Production now being obtained on Proctor web forming equipment ranges from 100 to 700 lbs/hr in widths of 60" to 96", depending on the desired requirements of the specific material being processed.

Proctor can supply complete non-woven production ranges for handling natural and synthetic fibers from the initial opening and blending through the required pre-carding and final web formation.

Non-woven fabrics are an ideal end use for many reprocessed fibers. Proctor has a complete line of equipment for waste reclamation suitable for upgrading and preparing fibers for the manufacture of these fabrics.

A wide range of drying and curing machinery is also available, engineered to handle the individual mill's fabric construction and bonding agent.

Auxiliary slitting and batching machinery can be furnished to complete the range.

PROCTOR & SCHWARTZ, Inc.

PHILADELPHIA 20, PA.

Proctor Equipment For Manufacturing Non-Woven Fabrics . . .

- BALE BREAKERS
- PICKERS
- SHREDDERS
- REPROCESSED FIBER GARNETTS
- BLENDING FEEDS
- BLENDING BINS
- CARD AND GARNETT FEEDS
- WEB FORMING GARNETTS
- CROSS LAPPERS
- DRYERS
- CURERS
- SLITTERS
- WINDING HEADS

ALL YOURS WITH RAYON STAPLE

American Enka's new staple plant is an important new source for users of spun rayon.

AMERICAN ENKA CORPORATION PRODUCERS OF JETSPUN® • FILAMENT AND STAPLE RAYON • FILAMENT AND STAPLE NYLON

530 Fifth Avenue, New York 36, N. Y. • 871 McCallie Avenue, Chattanooga, Tenn. • 428 Jefferson Standard Bldg., Greensboro, N. C. • 2001 Industrial Bank Bldg., Providence, R. I.

How gleaming aluminum buildings rise from red mud

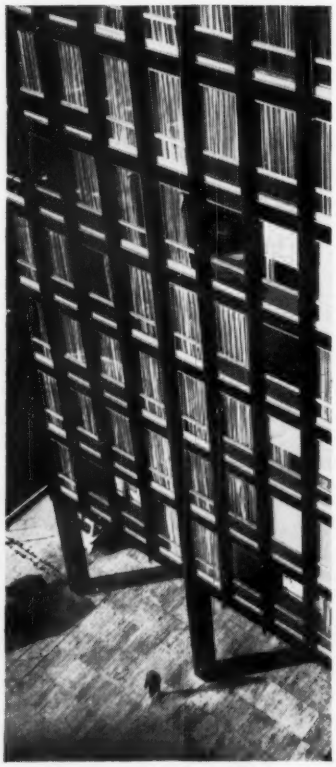
From Babel onward, men have held the vision of ever brighter, ever lighter towers soaring to the sky. Modern metals provided practical substance for the old dreams . . . look around at what's come true so recently.

High on any list of today's versatile, economical building materials you find aluminum and its alloys. Plate, sheet, rolled forms, extruded sections, tubing, wire, rod—forged, stamped, spun—this wondrous metal answers architects' aspirations, fabricators' requirements and users' needs.

With aluminum, as is so often true, the basic raw material is found in nature wildly mixed with other mineral compounds. Bauxite must be carefully purified to provide alumina, the effective starting point for aluminum. Here again, we're happy to report, major producers turn to Columbia-Southern.

Finely ground bauxite is digested with an alkaline solution, under pressure and heat. Treatment with the alkali separates bauxite into sodium aluminate (just several short steps this side of alumina) and a sludge of impurities called "red mud." No other chemical product known effects this necessary and delicate process so well, so economically as soda ash.

Columbia-Southern supplies soda ash to hundreds of producers of non-aluminum goods, too. A personal talk, call or wire can bring tank cars of chlorine, soda ash or other basic alkalies and specialty products to your siding with a speed that will probably amaze your own Traffic Department. Why not contact Columbia-Southern today, while the thought's still fresh?



900 Esplanade Apartments, Chicago—a new concept in multi-story exteriors making extensive use of aluminum supplied by Reynolds Metals Company. Architect: Ludwig Mies van der Rohe

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

chemicals at work

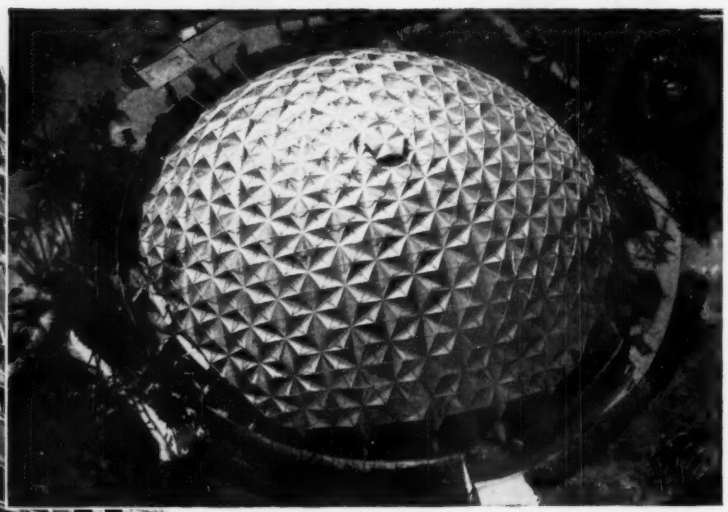
CHLORINE, ALKALIES AND RELATED CHEMICALS

OFFICES IN PRINCIPAL CITIES

IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

The Alcoa Building, world's first aluminum skyscraper, headquarters of the Aluminum Company of America, Pittsburgh, Pennsylvania. Architects: Harrison & Abramowitz.

Aluminum-domed auditorium, first structure of its kind to be built, graces the Hawaiian Village Hotel in Honolulu. Designed by Kaiser Aluminum & Chemical Corporation.

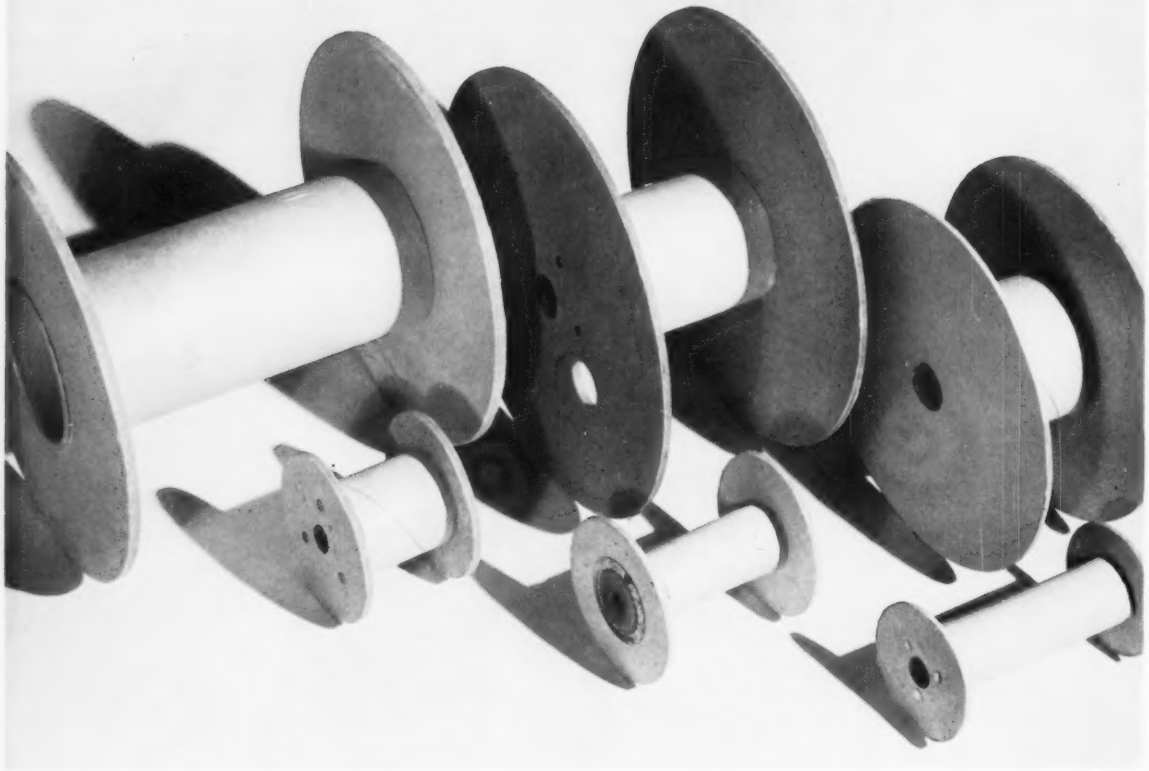


To help you choose with certainty the right white, CIBA has devised the Dial-a-Fiber Chart for ready reference so that you may select the UVITEX® Optical Brightener most suitable to your needs. Nothing else like it, you can "dial" by fiber type and quickly find at your fingertips all the basic information and specialized UVITEX properties you require for evaluation.

Ask your CIBA representative for your Dial-a-Fiber Chart, or write, CIBA Company Inc., 627 Greenwich St., New York 14, N. Y.

C I B A

When two heads are better . . .



SONOCO — source of special spools

SONOCO Spools are produced in an extensive range of sizes and types. Spool designs are engineered to meet your specific need—be it economy or use. SONOCO offers you years of experience in this field, plus the advantages of the most modern production methods.

Uniform quality materials are used in the manufacture of SONOCO Spools. Treated and printed heads are available. Certain type spools are adaptable to "knock-down" shipments. SONOCO Spools are ideal carriers for tape, braid, fringe, thread, yarn, rope and many other products. Get the spool to meet your exact requirements—from SONOCO!

Inquiries should specify head diameter, traverse, bore and barrel diameter.

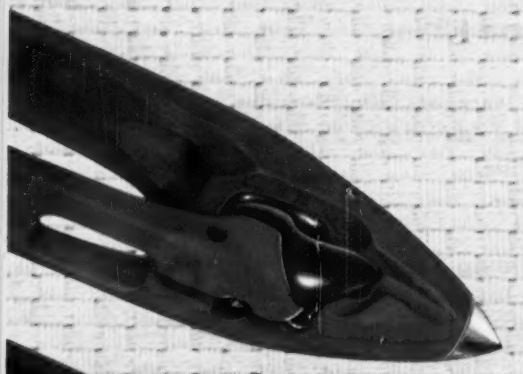
sonoco
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL. • ATLANTA, GA.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

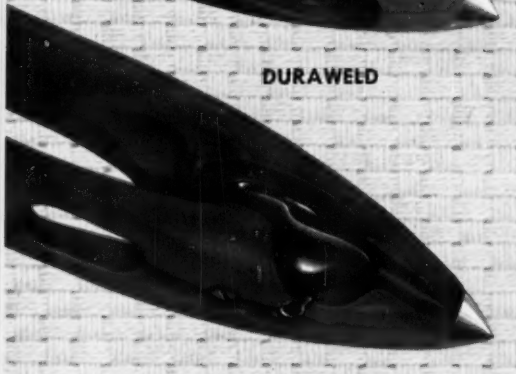
868



TEMPERED DOGWOOD

DURAWOOD

DURAWELD



DURAMOLD

Southern Quality Shuttles

Cost Less In The Long Run

Southern Shuttles are the answer to demands by textile mill men for longer, trouble-free shuttle life and better quality weaving. Here are examples of Southern's Quality line.

TEMPERED DOGWOOD—The finest natural wood shuttles treated with Southern's exclusive tempering process, making them extremely tough, wear-resistant and stable.

DURAWOOD—Southern's Tempered Dogwood shuttles further improved by an exclusive process of compression under heat. They are longer lasting, fracture-resistant, and slightly denser. They provide 50% greater life expectancy at a very nominal additional cost.

DURAWELD—These shuttles offer 100% longer life expectancy with a very moderate weight increase. Greater strength is assured through use of tempered dogwood end blocks for resiliency and tip retention, permanently bonded by an exclusive Southern method to long wearing wall sections of laminated wood or plastic.

DURAMOLD—Made of Westinghouse Micarta, remarkably strong, grainless molded plastic. Duramold shuttles last 3 to 4 times longer than natural wood shuttles, require less maintenance, reduce down time and weave better cloth. These are absolutely the finest shuttles on the market today.

SOUTHERN has a complete line of shuttles for you to select from—any size, any shape, any type, for any loom. You name it—Southern has it. Many standard sizes are in stock for immediate delivery.

World's largest manufacturer of all type Shuttles. Comparison made them famous.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

TEMPERED | QUALITY Stehedco CONTROL | STEHIDE

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

Automatic Winders for Rewound Filling

to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.

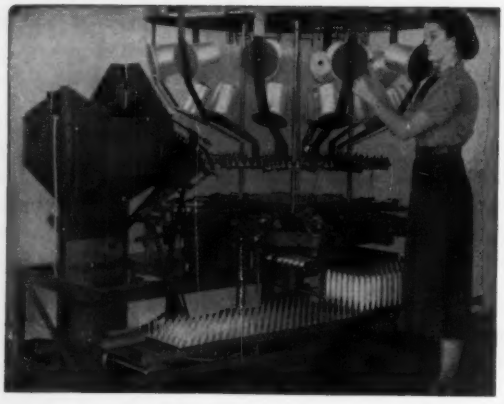
Abbott Traveling Spindle Automatic Quillers

For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model II High Speed Automatic Quillers Over 10,000 RPM

For winding fine cotton, spun synthetics, filament rayon and nylon, etc. with automatic pinboard attachment or wide belt inspection conveyor, or bobbin stacker.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

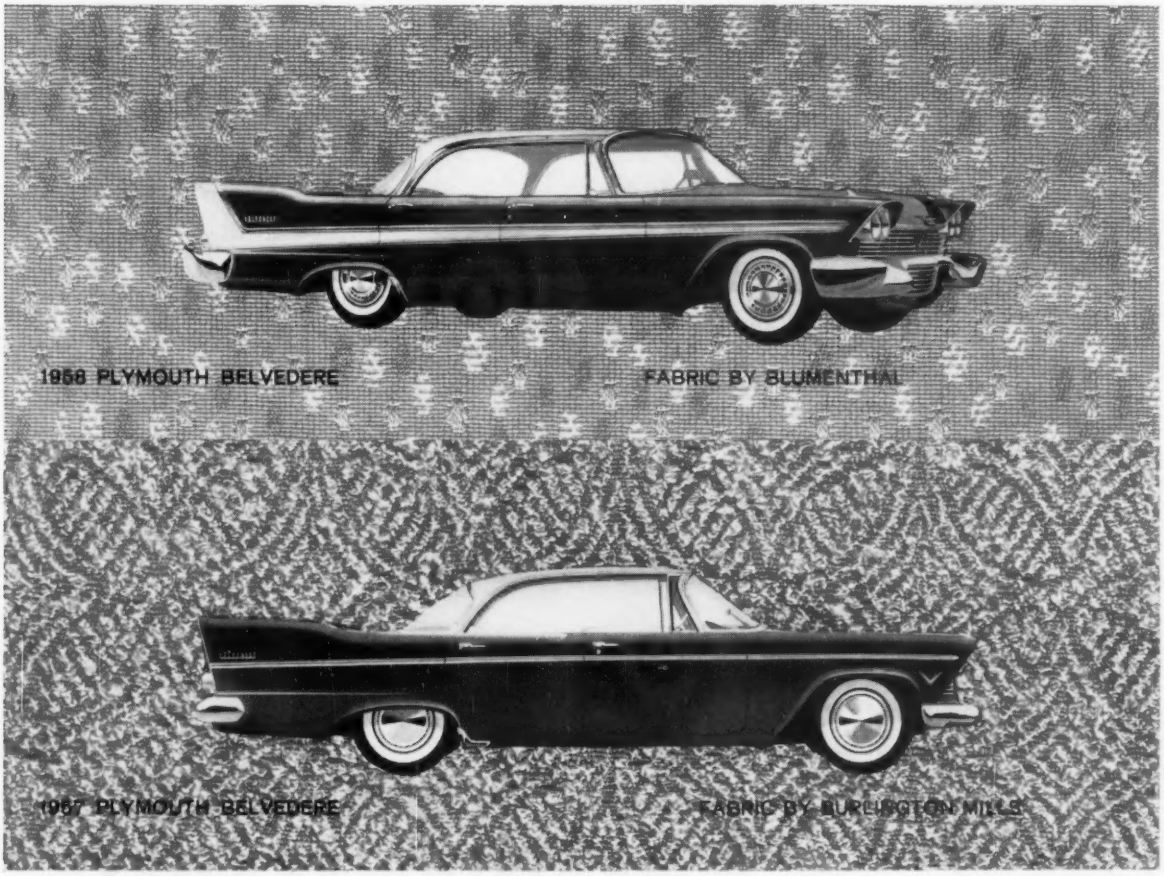
ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.

Inside story of the new 1958 Plymouth Belvedere:

The upholstery fabric again is made with I·R·C Continuous Process Rayon!



Plymouth's eminence as star of the Forward Look is the result of forward *thinking*. Every part of this beautiful car—both inside and out—must measure up to the highest standards of appearance and serviceability... to provide the best in ultra-modern performance.

That's why again for '58, as in 1957, Plymouth's Belvedere features superb upholstery woven from IRC Continuous Process Rayon.

Weavers of "critical" fabrics know that Continuous Process Rayon holds the record for making first quality goods. No other yarn dyes so evenly, with the same color density, and without streaking, shading, or band-filling.

Why not end *your* problems of weaving breakdowns... specify Continuous Process Rayon!

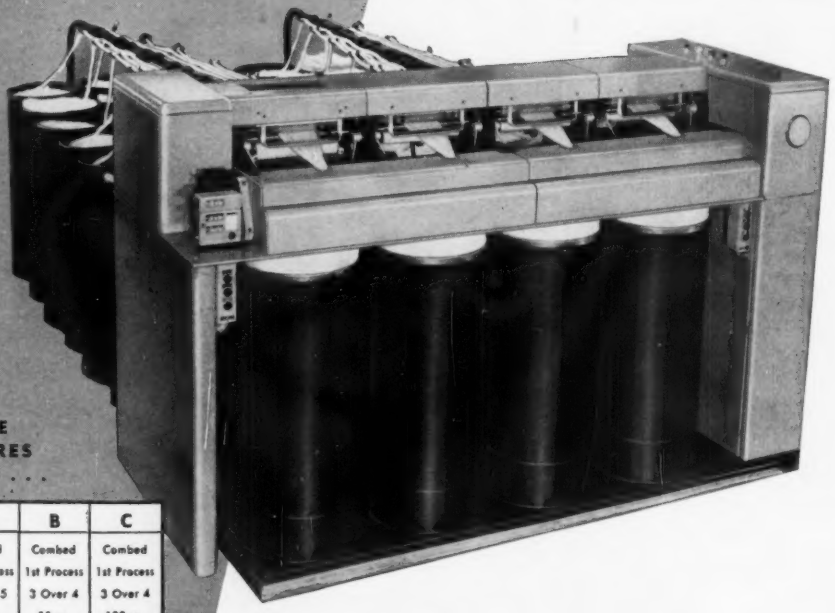
I·R·C

Industrial Rayon Corporation
Cleveland, Ohio

Producers of Continuous Process Rayon Yarns and Tyron® Cord for Tires
Sales Office: 500 Fifth Ave., New York 36, N. Y.

Use IRC Continuous Process Rayon... uniform mile after mile... perfect inch by inch... and it costs no more!

Production- KEY TO PROFITABLE OPERATION



COMPARE THESE PRODUCTION FIGURES WITH YOUR OWN . . .

Mill	A	A	B	C
Stock	Carded	Carded	Combed	Combed
Process	1st Process	2nd Process	1st Process	1st Process
Model Versamatic	4 Over 5	4 Over 5	3 Over 4	3 Over 4
Sliver Fed	52.5 gr.	54 gr.	55 gr.	120 gr.
Ends Up	8	8	8	4
Speed	264 ft./min.	264 ft./min.	260 ft./min.	216 ft./min.
Sliver Delivered	54 gr.	56 gr.	55 gr.	60 gr.
Tester	Saco-Lowell	Saco-Lowell	Saco-Lowell	Brush
Variation	18%—19%	18%—19%	10%—13%	14%—16%
Efficiency	92%—95%	92%—95%		
Deliveries	16	16	60	32
Deliveries/Operator	32	32	30	32
Can Size—Back	15" x 42"	15" x 42"	15" x 36"	
Can Size—Front	15" x 42"	15" x 42"	15" x 36"	14" x 36"
Yards/Can	3800 yds.	3875 yds.	3300 yds.	2850 yds.
Pounds/Can	29.3 lbs.	31.0 lbs.	25.9 lbs.	24.4 lbs.
Draft	7.77	7.71	8.03	8.03
Pounds/Man Hour	1250 lbs.	1270 lbs.	1105 lbs.	1070 lbs.

Versamatic DRAWING FRAMES by SACO-LOWELL

GIVE HIGHEST PRODUCTION OF QUALITY SLIVER BY EVERY STANDARD — PER DELIVERY — PER MAN HOUR — PER HORSEPOWER — PER SQUARE FOOT OF FLOOR SPACE.

For complete information and a demonstration — call your nearest Saco-Lowell office.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C., EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

How the **AVISCO**® Integrity Program helps mills serve converters better at a profit

Where do you figure in an end product tagging program?

Your profit is tied to the prosperity of your converter-customers. Theirs is tied to the acceptance of their fabrics by cutters, who depend in turn upon retailers and the buying public. The Avisco® Integrity Program, now in its third year, is designed to stimulate and protect everyone in this vital chain of distribution by maintaining a known standard of fabric quality.

How does the Avisco Integrity Program work?

The mill produces quality fabrics containing Avisco rayon and/or Avisco acetate alone or in blends of 50% or better with other types of fibers. Converters and finishers process the goods to meet or exceed Avisco test requirements for strength, shrink-resistance and colorfastness to sun, soaking, atmospheric fumes and washing or dry cleaning.

What does the cutter do?

The cutter attaches informative Avisco Integrity Tags to garments cut of this qualified fabric. The retailer displays and promotes the garments with Avisco Integrity Program merchandising material. Many stores report that their customers buy tagged garments with *confidence*, and come back for more.

What part does American Viscose play?

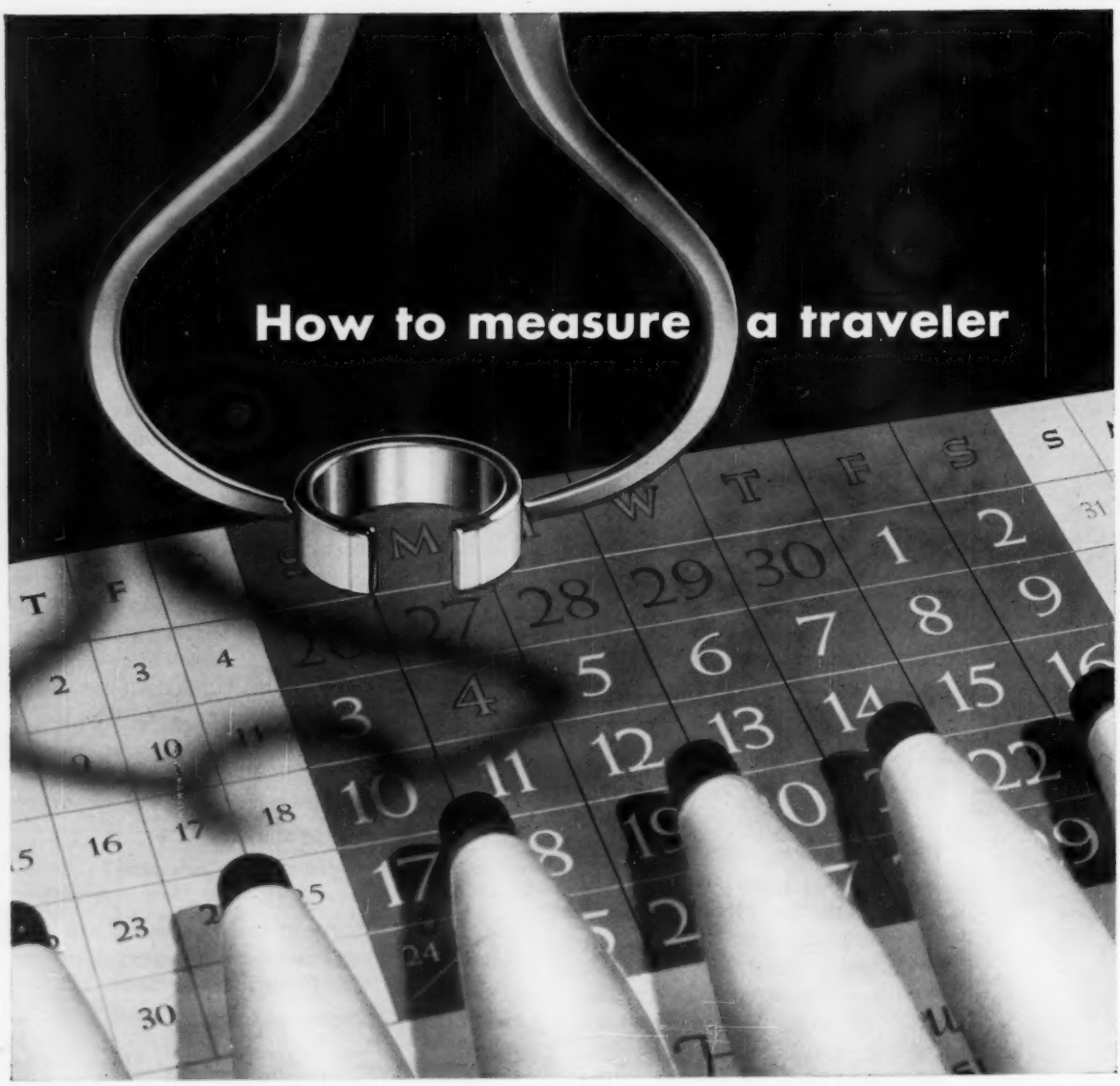
We arrange independent laboratory testing on the qualifications of each fabric. We execute letters of agreement with converters and cutters, assuring us that Integrity Tags will be attached only to garments made from qualified fabrics. We supply tags to cutters and merchandising materials to retailers. We back the entire program with extensive national advertising, identifying the Tag as the tested quality symbol consumers should look for.

How widely has the program been adopted?

Cutters of men's, women's and children's clothes are currently tagging over 1,750,000 garments a month.

Where can you get further information?

Call LA 4-7200 or write
American Viscose Corporation,
350 Fifth Ave., New York 1, N. Y.



Measure a traveler by days of trouble-free service, and by pounds of first-quality yarn delivered. Travelers vary widely by this test, even though they *look* alike and meet dimensional specifications.

Under *any* conditions, you can be sure of maximum production per traveler when you rely on Victor experience and quality control.

That's the reason why Victor Travelers are chosen for over 12,000,000 spindles. Mill men everywhere find that Victor quality pays off, consistently, in longer traveler life . . . with fewer ends down . . . at higher spinning and twisting speeds.

A Victor Service Engineer will help you select Travelers that measure up to maximum production on any yarn you are running. Write, wire, or phone for prompt service.

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . 20 Mathewson Street . . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . . Tel. UNiversity 5-0891

Keep a Step ahead with

VICTOR Ring Travelers

13 good reasons why "Tergitol" surface active agents and textiles work together

13—that's how many TERGITOL surface active agents you can choose from. This excellent selection includes *eight* nonionics and *five* anionics. So whether you're interested in dyeing, scouring, bleaching, carbonizing, or mercerizing there's a nonionic, anionic, or blend of surfactants to choose from—

TERGITOL Nonionics	*Cloud Point °C.*	*Properties*
NP-14	—	Oil-soluble emulsifier and detergent
NP-27	20	Aromatic-soluble emulsifier and wetting agent
NPX Anhydrous	56-60	General purpose detergent, wetting agent, and emulsifier
NP-35	90-95	Detergent and wetting agent at elevated temperatures or in presence of dissolved salts
NP-40	100	Detergent and wetting agent above 100°C.
TMN	35-37	Outstanding nonionic wetting agent with good leveling rewetting properties
XD	60-65	Outstanding emulsifiers and low-foaming detergents
XH	90-100	

TERGITOL Anionics	*Conditions for Use*
7 and P-28	for dilute solutions of acids, alkalies, and salts.
4	for moderately concentrated solutions of acids, alkalies, and salts.
08 and EH	for concentrated solutions of acids, alkalies, and salts.

"Tergitol" and "Union Carbide" are registered trade-marks of UCC.

For a new 40-page booklet on TERGITOL surface active agents, write—Union Carbide Chemicals Company, 30 East 42nd Street, Department HA, New York 17, New York. In Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal.

UNION CARBIDE

CHEMICALS

Union Carbide Chemicals Company
Division of Union Carbide Corporation
30 East 42nd Street, New York 17, N. Y.

New technical bulletin on year's most important development:

PERMANENTLY ANTI-STATIC TRICOT

New Celanese Bulletin TD-16 covers "Dyeing, Finishing and Anti-Static 'S' Processing of Tricot from Arnel." The information comes from two sources:

1. Celanese development laboratories where these methods have been proven on a commercial scale.

2. The accumulated experience of commercial dyers and finishers of tricot of Arnel.

If you are concerned with processing tricot of Arnel, send for bulletin TD-16 today.

Celanese® Arnel®

Celanese Corporation of America, Textile Division, Charlotte, N. C.

District Sales Offices

180 Madison Ave. New York 16, N. Y.
Room 10-141 Merchandise Mart Chicago 54, Illinois
P. O. Box 1414 Charlotte 1, N. C.
200 Boylston St. Chestnut Hill 67, Mass.
819 Santee St., Los Angeles, California

Export

Amcel Co., Inc.
Pan Amcel Co., Inc.
180 Madison Ave. New York 16, N. Y.

In Canada

Chemcell, Canadian Chemical & Cellulose Co., Ltd.
2035 Guy St. Montreal

Celanese CONTEMPORARY FIBERS

ARNEL® TRIACETATE · FORTISAN®-36 RAYON · CELACLOUD™ ACETATE · VISCOSE · RAYON

Since 1922 -

COMPLETE PACKAGE SERVICE

NYLON
DACRON
RAYON
WORSTED

Hoffner has specialized for 35 years on filament yarns, thrown natural or dyed to your own specifications.

Ask us to help you take the uncertainty out of modern yarn preparation.

YARNS ON TUBES, CONES OR IN THE CAKE

Also spun synthetic yarns and worsted yarns.

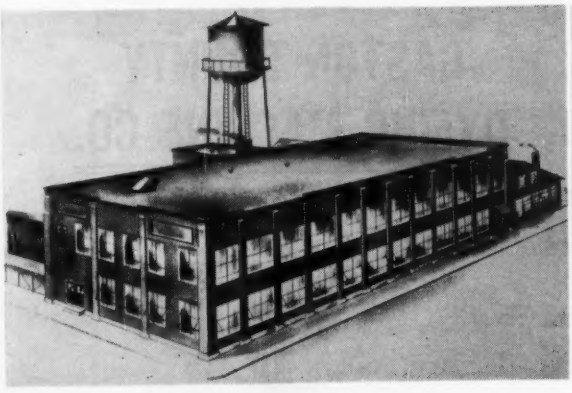
HOFFNER
RAYON COMPANY

GENERAL OFFICES

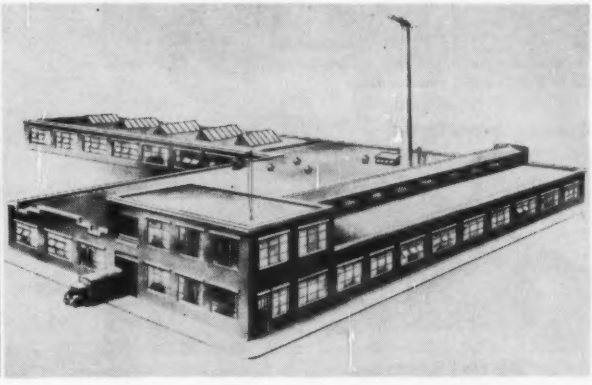
Belgrade & Ontario Streets, Philadelphia 34, Pennsylvania.
Plants at Philadelphia and Quakertown, Pennsylvania.

SALES REPRESENTATIVES

The Tillinghast — Stiles Co.
Providence, R. I.—Chicago 4, Ill.
Shannonhouse & Wetzell, Johnston Building,
Charlotte 2, N. C.



Throwing plant: Quakertown, Pa.



Main plant and office: Belgrade and Ontario Streets

WHAT IS ENGINEERING?

C. J. Webb

A. M. Rhyne

H. L. Davis

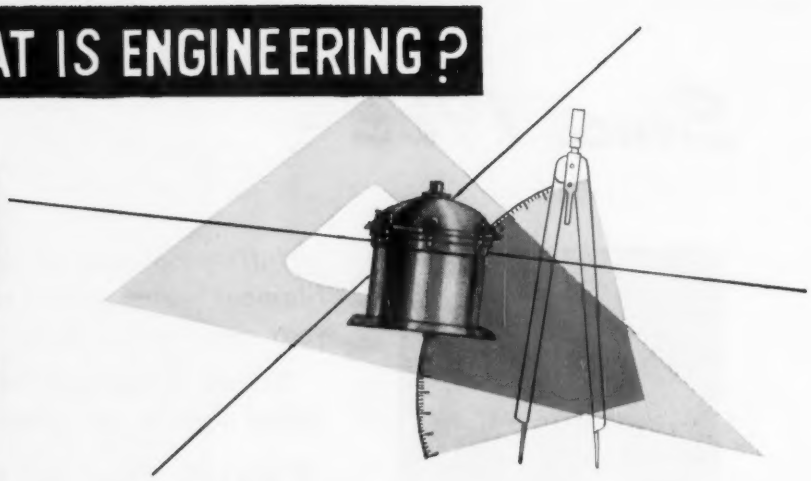
H. Y. Craig

M. P. Hudson

J. G. Luker

C. A. Brandon

E. J. Crisp



Engineering may be defined in many ways since it covers so many fields of endeavor.
Since it was founded 36 years ago in 1921, Gaston County Dyeing Machine Company has stressed the importance of custom designed equipment for the particular needs of individual mill requirements.
To accomplish this purpose we have constantly expanded our engineering department to meet the needs of the textile industry.
There is no substitute for experience, and we believe our engineers have the ability and experience to assist you in solving your problems in processing equipment of all types. Educational backgrounds include North Carolina State College, University of Tennessee and Duke University.

ENGINEERING STAFF

The dyeing of yarns, fabrics and raw stocks was and to some extent still is an art; however, the rapid development of new fibers has resulted in much research and laboratory work to develop new dyes and chemicals to obtain proper dyeing of the new fibers. Dyeing and drying of textiles may now be properly called a science.
The above developments require new and better designs in dyeing and drying machinery in order that maximum results will be secured with improved dyes and chemicals.
A complete service in engineering, designing and building of processing equipment is yours for the asking.

Office building and machine shop

New assembly plant

GASTON COUNTY DYEING MACHINE CO.

ESTABLISHED 1921 — STANLEY, N. C.

DESIGNERS AND BUILDERS OF DYEING, BLEACHING, EXTRACTING, AND DRYING MACHINES

Stainless Steel Fabricators—Process Tanks and Pipe

MODERN
TEXTILES MAGAZINE

November 1957
Volume 38 Number 11

Publisher's Viewpoint

The Importance of BISFA

Recently, the American man-made fiber industry was presented with a pleasant opportunity to learn something about the aims and achievements of the organization bearing the formidable title of Bureau International pour la Standardisation de la Rayonne et des Fibres Synthetiques, commonly called BISFA for short. At a gathering in New York City attended by high ranking executives of virtually all U. S. yarn producers, Dr. Domenico Bosco of Rhodiatoce, Milan, Italy, chairman of BISFA's technical committee, spoke briefly of the organization's work. He asked U. S. producers of man-made fibers to consider whether their respective interests as individual companies as well as the good of the American industry as a whole might not be advanced by their joining BISFA.

Dr. Bosco's invitation would certainly seem worth considering by member companies of the American man-made fibers industry who, like their fellow companies elsewhere in the free world, are deeply concerned with the advancement of man-made fibers and the maintenance of the highest standards of performance of these textile materials.

To appreciate fully the significance of Dr. Bosco's invitation, it might be well to review exactly what BISFA is. Essentially, BISFA is a standards organization doing for man-made fibers what such organizations as the American Standards Association and the International Standards Organization do for industrial standards generally. In particular, BISFA, as Dr. Bosco pointed out, "provides for the fiber manufacturer a minimum standard of production and for the customer an accepted standard of quality for man-made fibers."

First set up in 1928, BISFA has among its members 71 companies producing man-made fibers from 17 different countries in Europe, North and South America and Africa. Organizationally, BISFA is divided into two major departments. One of these is its technical committee which furthers the work of ISO in the standarization of man-made fibers and makes technical recommendations. The second important body within BISFA is its general assembly, composed of representatives of each country, which considers the recommendations of the technical committee in the light of their commercial implications.

In the 29 years of its existence, BISFA has accomplished many worthy things for the man-made fibers industry. But with the growth of the industry here and abroad and the frequent appearance of new fibers, BISFA feels that its most important work lies in the future. It plans, for example, among many other projects, to develop rules for polyester filament yarns and staple; to do work on a statistical basis for methods of sampling; to carry on an investigation of a rational series of standard counts for both fibers and yarns.

By virtue of its good work already accomplished and its plans for future work; by virtue also of its distinguished membership, BISFA is undoubtedly an organization that serves the man-made fibers industry well.

A. H. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Pessimism about textiles held based on backward looks; Glance into future shows many reasons for optimism

Various projections of economic activity have been publicized recently, and many make painful reading for textile-apparel executives. Good-sized increases are usually forecast for most consumers' goods and services. But only small gains are predicted for textiles and apparel.

Pessimism is Not Justified—This pessimism about future stems directly from trends of past. In 1940, clothing accounted for 8.6% of total consumers' expenditures. By 1957, clothing's share had declined to 6.5%. Although this postwar record of relative loss cannot be ignored, it provides no proof that these trends will continue. In fact, two points should be kept in mind:

1. Various forms of activity are available to textile—apparel producers and distributors which will improve position of their products in competition with others.

2. Efforts to stimulate business, whether by individual firms or industry-supported, should be more successful now than similar efforts would have been earlier in postwar period.

To consider the second point first, economic climate today is different than ten years ago. Millions of consumers have now obtained new homes, new cars, and hosts of new appliances, which were so desperately wanted early in postwar period. Pressure to buy durable goods at expense of other items has been greatly reduced.

But Textiles Will Not Automatically Benefit—This does not imply consumers will automatically increase buying of textiles and apparel, now that they are spending less freely for durable goods. There are other commodities and services which also make strong appeal. But at least dice aren't loaded against textiles and apparel as they were in earlier years. Consumers today are more willing to look at what industry has to offer. And outlook is further improved by fact that textile industry has more to offer now than it has ever had in past.

This last is the real reason for more optimistic view of textile—apparel prospects than is frequently expressed. Here are factors which industry has in its favor:

Abundant New Textile Products—Even oldest of non-cellulosic fibers is relatively young. And in addition to nylon and all the new fibers that followed it, there are new finishes and new processes leading to style originality such as texturizing.

New products in themselves stimulate consumer interest. However, newness causes difficulties in processing. Early products of a new fiber or new process are sometime poor quality. But for most recent innovations in textiles, whether fibers or finishes or manufacturing processes, a fairly high point of technical proficiency has been reached. Better quality in new items is more general, and stimulating effect on sales consequently greater.

Quality Identification Helps Sales—Although identification of quality is not general, nevertheless, bigger share of textile national advertising, at least, does emphasize quality and provides guidance to consumer in obtaining quality products. This trend is encouraging trading up and helps dollar sales and profits. It can also be argued that satisfied consumers are more likely to increase their unit purchases.

(Continued on Page 73)

Dr. Shook is vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

From their industrious father the five sons of Joseph Hoffner learned the value of hard work and wholehearted devotion to their customers' interests. On this basis they have built a solid reputation as yarn dyers and suppliers.

ELDEST SON—Joseph C. Hoffner, first-born of the five Hoffner sons, is president of Hoffner Rayon Co. He has the overall supervision of the business which operates a dye house in North Philadelphia and a throwing plant in Quakertown, Pa.

A family business in textiles

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

IT REMAINS one of the great attractions of the textile industry that it is still possible for the right man to start with practically nothing but ability and determination and build an enduring business. And it is still true that in some areas of textiles, in spite of the dominant tendency toward bigger and bigger companies formed through mergers, there remains fertile fields for the prosperous flourishing of what may accurately be called "family businesses." In these businesses, skill acquired by diligent study and hard practical work; knowledge of the market learned by years of patient "calling on the trade;" the faithful appreciation of old customers and the earning of new customers as a result of solid reputation for good work—these are the foundation stones of unpretentious and modest success.

One of the "family businesses" in textiles that is an outstanding example that such firms can prosper is Hoffner Rayon Co., of Philadelphia. Carried on today by the five Hoffner brothers, all worthy sons of their hardworking father, the late Joseph P. Hoffner, the firm is a supplier of man-made filament yarns for weavers, knitters and braiders. It buys raw yarn from yarn producers, dyes and throws the yarn to meet customers' specifications. Hoffner also does some commission dyeing and throwing. The company has two plants, one in North Philadelphia largely given to dyeing, and another plant in Quakertown, Pa. about 40 miles away, where throwing is done.

The story of Hoffner Rayon Co. began a long time ago, in the year 1901 when a young fellow named Joseph P. Hoffner got himself a job with S. Rosenau, a Philadelphia textile firm specializing in the manufacture of millinery braids and trimmings. Taken on as a shipping clerk, young Hoffner soon realized that practically any young fellow could perform the simple duties required in that job. He was ambitious, energetic and possessed of a great deal of down-to-earth good sense. Seeing that he was working for a textile manufacturing firm, he decided that his best way to get ahead was to learn more about textiles, learn skills that would make him more useful to his employer.

Consequently he lost no time in enrolling in Philadelphia Textile Institute for the school's evening courses. He elected to specialize in dyeing. When he finished his evening courses after a few years, the Rosenau management demonstrated their confidence in his ability and their respect for his newly acquired knowledge of dyeing by a remarkable gesture. The

JOHN G. HOFFNER

The second of the five sons, he has charge of dyeing operations.

company decided to add a dyehouse to their manufacturing facilities, and they placed Hoffner in charge of it.

Joseph Hoffner remained with Rosenau until 1922. During those years, he married and raised a family which in time came to number five sons and three daughters. In 1922, when he was 39 years old, Hoffner made a big decision. He decided to translate into action a plan that had long been ripening in his mind —to go into business for himself.

In his new venture, Hoffner had some enormously valuable intangible assets. Among these were 20 years of dyeing skill earned through daily hard work in the hot and steamy Rosenau dyehouse in the dyeing of yarns, braids and trimmings. Especially valuable, was his intimate knowledge of the best ways to dye rayon yarns and fabrics. Rosenau had been among the pioneer users of rayon, and Hoffner had been immersed for years in the task of dyeing this new textile material in ways that would result in serviceably colorfast fabrics.

A Modest Beginning

In tangible assets such as dollars to rent plant space and buy equipment, Hoffner was somewhat less richly equipped. As a salaried man struggling to raise a large family, he had not been able to accumulate much money to invest in his new business. As a result, he started out on a very modest scale indeed. In rented quarters at 4th and Cumberland Streets in the Kensington section of North Philadelphia, he went into business with a few small second-hand dyeing kettles.

His long years of experience in the braids and trimmings field, and his reputation as a skillful dyer soon brought him enough business to keep him hard at work. In 1923, the second year of his venture, he booked $43,000 worth of business as a commission dyer. By 1928, the business had reached a yearly dollar volume of $86,000 and had on its payroll about 30 employees. In that year satisfying growth was marked in another way. Hoffner Rayon Co., as the business was called, moved to larger quarters at Howard and Huntington Streets.

As the business grew so did the sons of Joseph Hoffner, and as the boys reached high school age, they began working around the dyehouse during their school vacations. The oldest, Joseph C. Hoffner, came into the business full time after graduating from La Salle College and studying accounting and business administration at Pierce Business College.

He was followed by the next oldest brother, John, who joined up after equipping himself for a career in textiles by graduating from Philadelphia Textile Institute. The next of the five Hoffner boys to come into textiles was James, also a graduate of Philadelphia Textile Institute, who worked for American Viscose Corp. for a few years before coming into the family firm.

During World War II, John and James served in the Navy, while Charles, the fourth Hoffner brother, served in the Army. When he was released from the service, he followed his brothers, first to Philadelphia Textile Institute, and after graduating, into the family business. Laurence, the youngest of the brothers, came into the business after serving with the Army in Korea.

Yarn Packaging—A New Business

In those years when one by one, the Hoffner boys were bringing their varied abilities and energies into the business, Hoffner Rayon Co. was growing steadily. Its growth was aided by the turn it had taken in the 1930's to be something more than a commission dyeing house. The elder Hoffner had realized with great business acumen that smaller weavers, knitters and braiders had great need for dyed rayon yarns packaged more conveniently for their use and that they would pay for such convenient packaging. So he had moved into the business of jobbing rayon yarns as well as dyeing them on a commission basis. He bought yarn for his own account, dyed it to meet the needs of customers, and packaged it on cones and tubes so that customers could put it right on their knitting and braiding machines or on their quill winding and beaming equipment without having to go through the time-consuming and equipment-needing steps of themselves winding the yarn from skeins.

(Continued on Page 68)

JAMES M. HOFFNER

Lofted acetate in carpets

By W. I. Langstaff,
E. J. Nickerson & L. P. Hoskins*

Lofting techniques have renewed use of acetate in floor coverings. Here is a detailed report on how such yarns perform in this end use.

IT HAS LONG been recognized that because of its properties cellulose acetate has good potential as a carpet fiber. Among these properties are good resilience; low cost; resistance to moths, mildew, silverfish; excellent whiteness that permits high clarity of color; good resistance to soiling; excellent resistance to staining; excellent cleanability; and good twist retention properties.

Early in the development of an acetate fiber for the carpet trade, however, it was found that carpets made from ordinary cellulose acetate staple yarns left something to be desired both in performance and texture, this being particularly true in piece-dyed carpets. Tennessee Eastman Co. has pioneered work in developing techniques for lofting continuous filament yarns to make possible new textures in fabrics. Eastman has also pioneered in altering the cross-sectional shape of fibers to obtain specific properties and effects. The techniques of lofting continuous filament yarn and altering the cross-sectional shape of the fiber have been combined to develop a new type of carpet yarn with definite advantages in performance, styling and processability. Among these advantages are improved carpet texture, greatly improved crush resistance, improved soil resistance and cleanability, excellent appearance after extended wear, reduction of shedding and fuzzing, outstanding stain resistance, increased cover, and better processing efficiency.

Development of Lofted Carpet Yarn

Several years ago Tennessee Eastman introduced lofted Estron and Chromspun acetate yarns in deniers up to 1080 for use in the textile trade. In developing a similar yarn for the carpet trade, yarns of 2200, 2700 and 5300 denier were used to correspond with spun yarn sizes commonly used by carpet manufacturers.

Extensive work has produced techniques for lofting continuous filament acetate in these heavy deniers so as to give a resulting yarn with more than twice the specific volume of regular continuous filament yarn and appreciably greater specific volume than comparable spun yarns. This increase in bulk is shown by the chart in Figure 1. These values were obtained by a laboratory specific volume measurement which involves weighing a fixed volume of yarn wound under controlled tension.

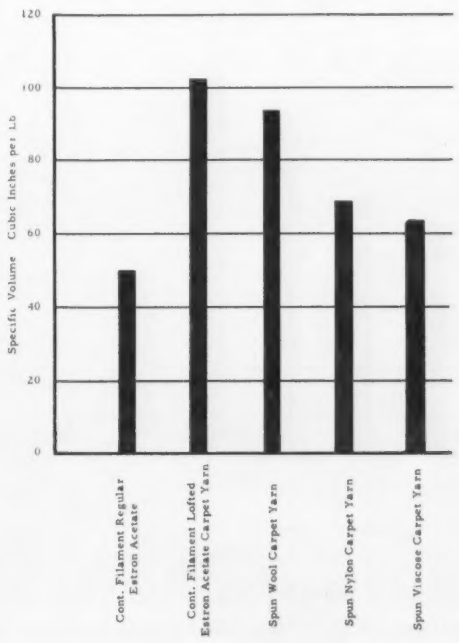
The lofting technique consists of passing a continuous filament yarn through a bulking unit in which air is used to blow loops and entanglements into the strand of yarn. This treatment greatly increases the yarn diameter and gives it a rough texture as opposed to the smooth texture of regular continuous filament yarn.

As seen in Figure 2, the surface of lofted yarn, while resembling that of a spun yarn, is considerably less hairy; but at the same time it is completely different from the continuous filament yarn.

Yarn made by this technique is extremely uniform when compared with a spun staple yarn. The comparison of the evenness of such yarns with commonly used spun staple carpet yarns as measured on the Uster Evenness Tester is shown in Figure 3.

Further advantages of this yarn are that it does not have slubs such as are present in spun yarns and that the yarn is available in large knotless packages. These factors have proved to be very important in obtaining improved operating efficiency particularly in the tufting operation. Production experience in tufting plied lofted yarns has shown that machine stops other than those caused by splice failure are virtually nonexistent.

FIG. 1 - SPECIFIC VOLUME COMPARISONS OF CARPET YARNS



* Mr. Langstaff is with Eastman Chemical Products, Inc. Messrs. Nickerson and Hoskins are with Tennessee Eastman Co.

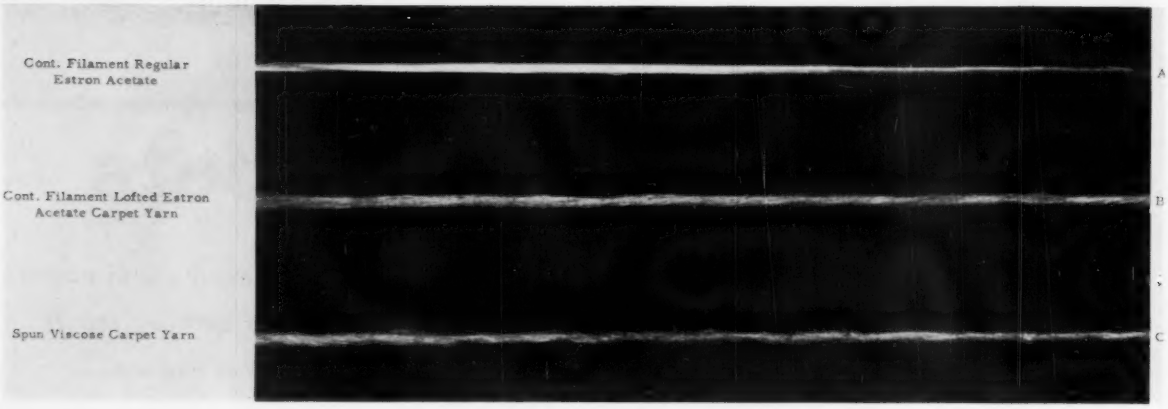


Fig. 2—Longitudinal Comparisons

While having greater cover, lofted yarn gives the approximate carpet texture of spun yarn yet eliminates loose fiber ends which are present in spun yarns and minimizes fuzziness of the carpet surface, particularly in loop pile constructions. Shedding is virtually eliminated because there are no loose fibers to pull out.

The most important advantage offered by this yarn, however, is its exceptional crush resistance. It was discovered that continuous filament yarn when bent, flexed, or compressed offers much greater resistance to deformation and springs back much more readily than does a spun staple yarn. Data supporting this finding will be presented later in this article.

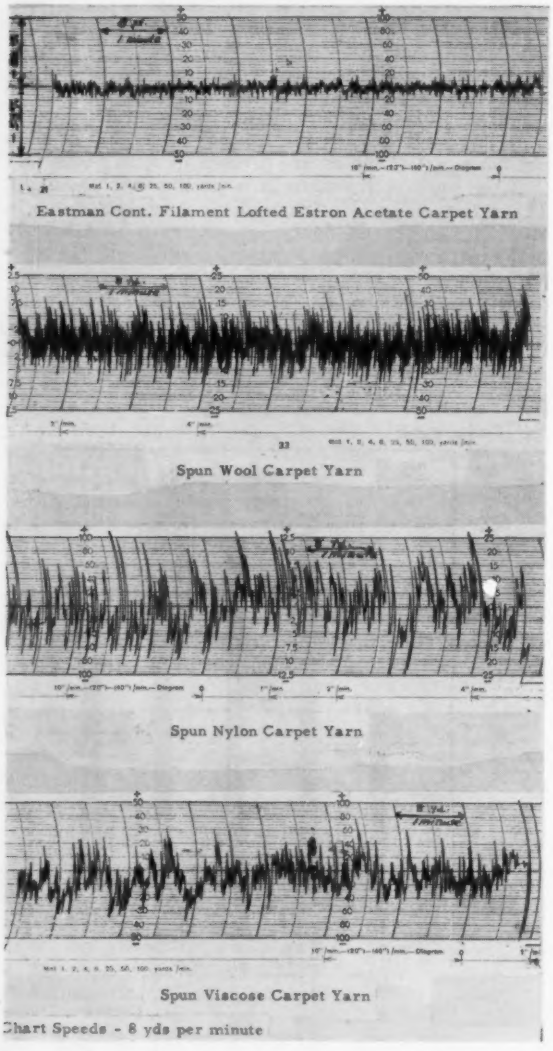
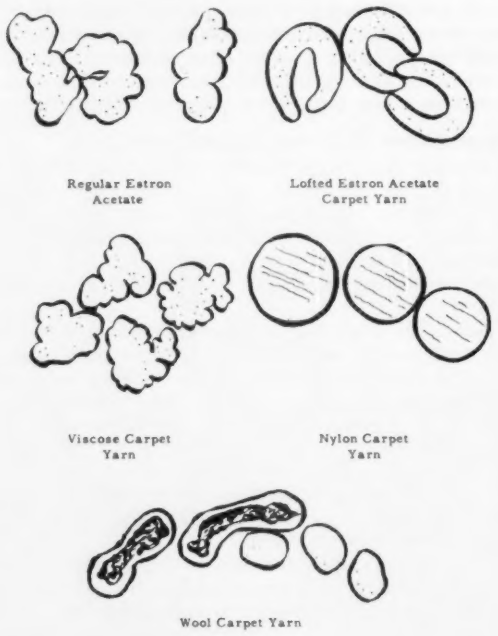

Eastman Cont. Filament Lofted Estron Acetate Carpet Yarn
Spun Wool Carpet Yarn
Spun Nylon Carpet Yarn
Spun Viscose Carpet Yarn
Chart Speeds - 8 yds per minute

Fig. 3—Yarn Uniformity determined by Uster Uniformity Tester

Development of New Cross Section

While satisfactory carpets can be made using regular acetate lofted yarns, development work in varying the cross-sectional shape of the acetate fibers proved that better cover, increased resistance to crushing, improved soil resistance and more satisfactory textures, particularly in cut pile carpets, can

FIG. 4 - YARN CROSS SECTION COMPARISON



(Continued on Page 76)

88 ways Outstanding!

You may never see a better "report card" than our Technical Bulletin No. 443 on this outstanding vat color. In a total of 91 fastness and working properties listed, National Carbanthrene Grey BFN Paste *earns top or next-to-top ratings in all but three!*

Light fastness is maximum in heavy shades and excellent-to-maximum in medium shades. Wet fastness is excellent in all tests, including chlorine and washing.

National Carbanthrene Grey BFN Paste is particularly recommended for cotton and rayon fabrics that are to be rubberized or after-treated with resins. It can be applied in all types of dyeing equipment.

For your copy of Technical Bulletin 443 and a working sample of this unusual National Vat Dye, get in touch with the National Aniline office nearest you.

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago
Columbus, Ga. Greensboro Los Angeles New Orleans Philadelphia
Portland, Ore. Providence Richmond San Francisco Toronto

Member of the Vat Dye Institute

First fluid bed dryer

New machine successfully uses novel finishing method

By K. R. Draw

LONDON—The use of fluid beds, a new, radically different and promising method for drying and dyeing fabrics, and for heat setting resin finishes, has reached successful commercial application. British Tufting Machinery, Ltd., textile machinery makers of Blackburn, England, has completed proving trials on the world's first commercial fluid bed for drying fabrics.

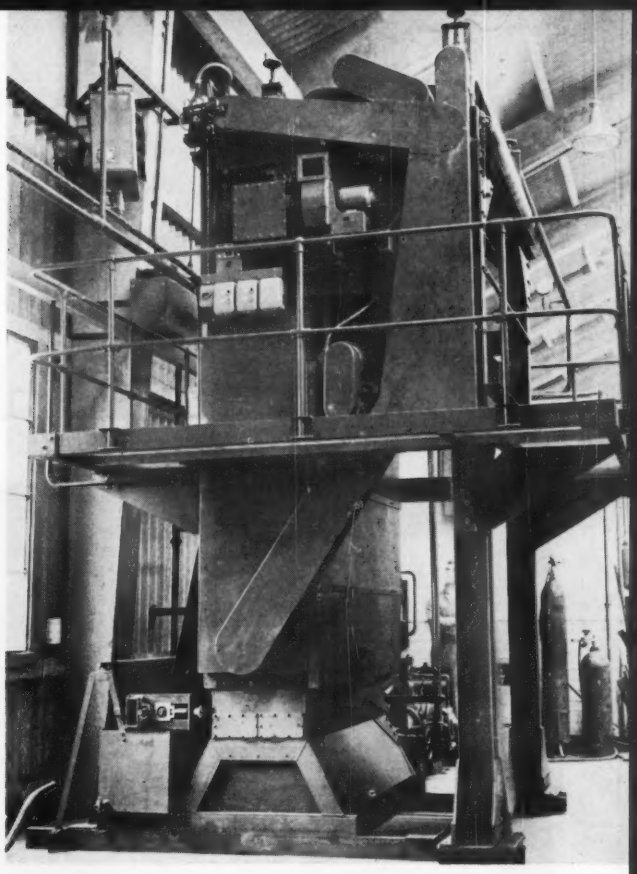
Although the complete range of application of the unit has not yet been fully established, fabrics ranging in weight from very heavy to medium have been processed successfully. It is expected that only the very lightest dress fabrics will cause any difficulties.

Rates of operation obtained naturally vary with the type of cloth being treated and with its moisture content. But a typical example of the performance of the unit is shown by a 12-ounce jute canvas, saturated to over 100% dry weight, being dried at a rate of 16-feet per minute. Operating temperature of the bed was 140°C. No extra problems are presented when cloths of man-made fibers are processed.

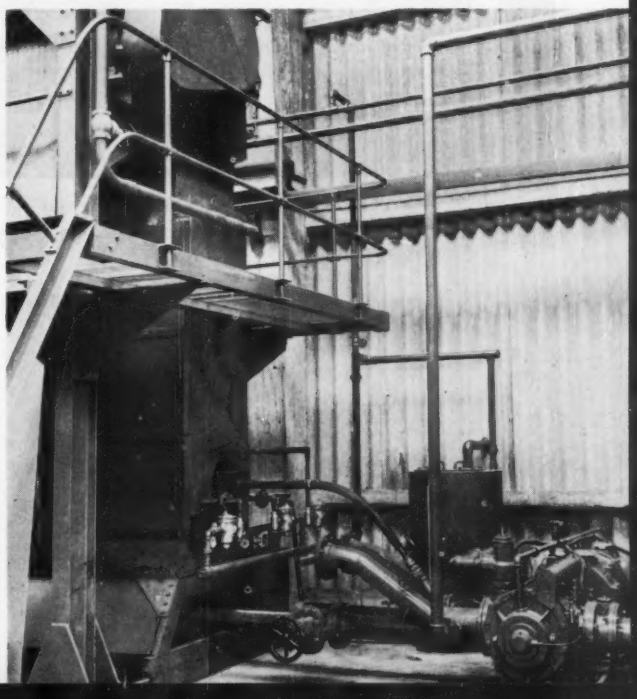
This first machine handles cloth 60 inches wide. The machine itself stands 15 feet high, and including auxiliary equipment (compressor, etc.) requires only approximately 65 square feet of floor space. Its weight is said to be between five and six tons. Cost is considerably less than that of the usual type of stenter equipment.

Basically a fluid bed system consists of a drum filled with some fluidizing substance, such as grains of sand or tiny glass beads. A current of air induced into the bottom of the drum agitates the grains, and heat from a source also within the drum is conveyed by the movement of these particles. Fabric passed through the drum is dried with remarkable efficiency, at least three times faster than by any method at present in general use.

Potentially there are two types of fluid bed systems. The fabric can be entered at the top of the drum and passed out through the bottom. This is known as a single-pass bed. British Tufting Machinery's unit is



THIS IS A FLUID BED—Cloth is passed up left side of the machine to top then into central drum. Emerging from drum it passes through beater mechanism which can be seen partly on top right of machine. Cloth then passes down right of machine to floor, where in commercial production there would be take-up beam



HEAT, AIR SUPPLIED HERE—This close-up shows auxiliary equipment supplying needed heat and air to fluid bed

Texturized filament nylon? . . . What

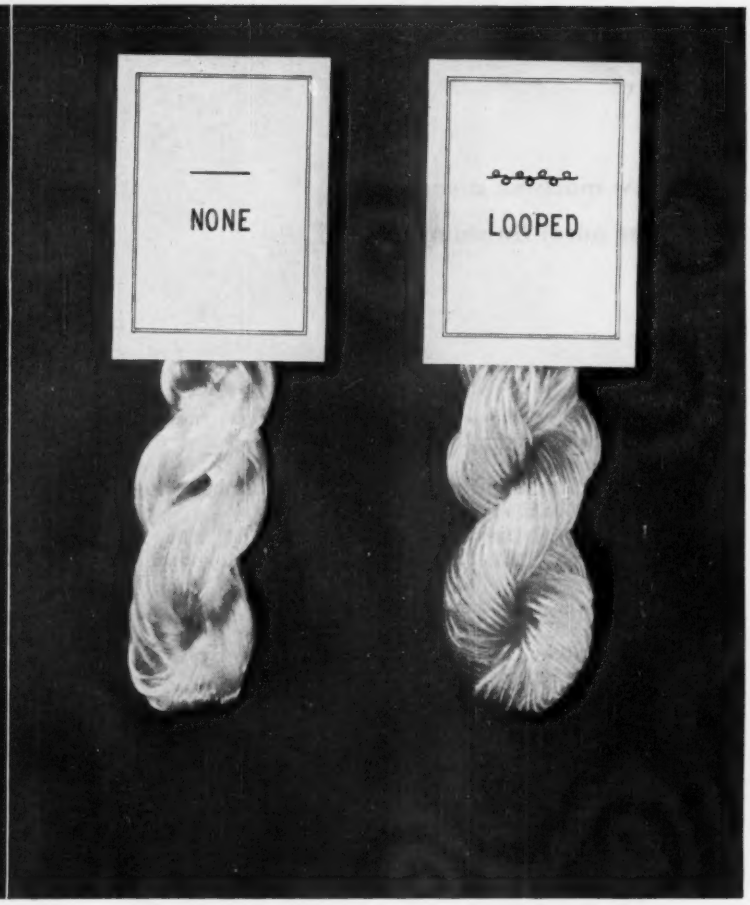
Take a Look at How Caprolan Responds to Four Popular Bulking Processes!

The left-hand skein is simply 60 yards of our 2100-112-0-0-HB heavy yarn which *has not* been texturized by *any* method. To its right are four skeins of the same weight of the same yarn bulked by looping, curling and two methods of crimping.

These texturized yarns of Caprolan tell their own story!

If you are a producer of carpets, upholstery fabrics, decorative textiles, industrial fabrics or military goods, texturized filament yarns of Caprolan open a whole new world of fabric engineering and design opportunities for you. Used alone, or in combination with each other, texturized yarns should hold a high priority in your future fabric plans.

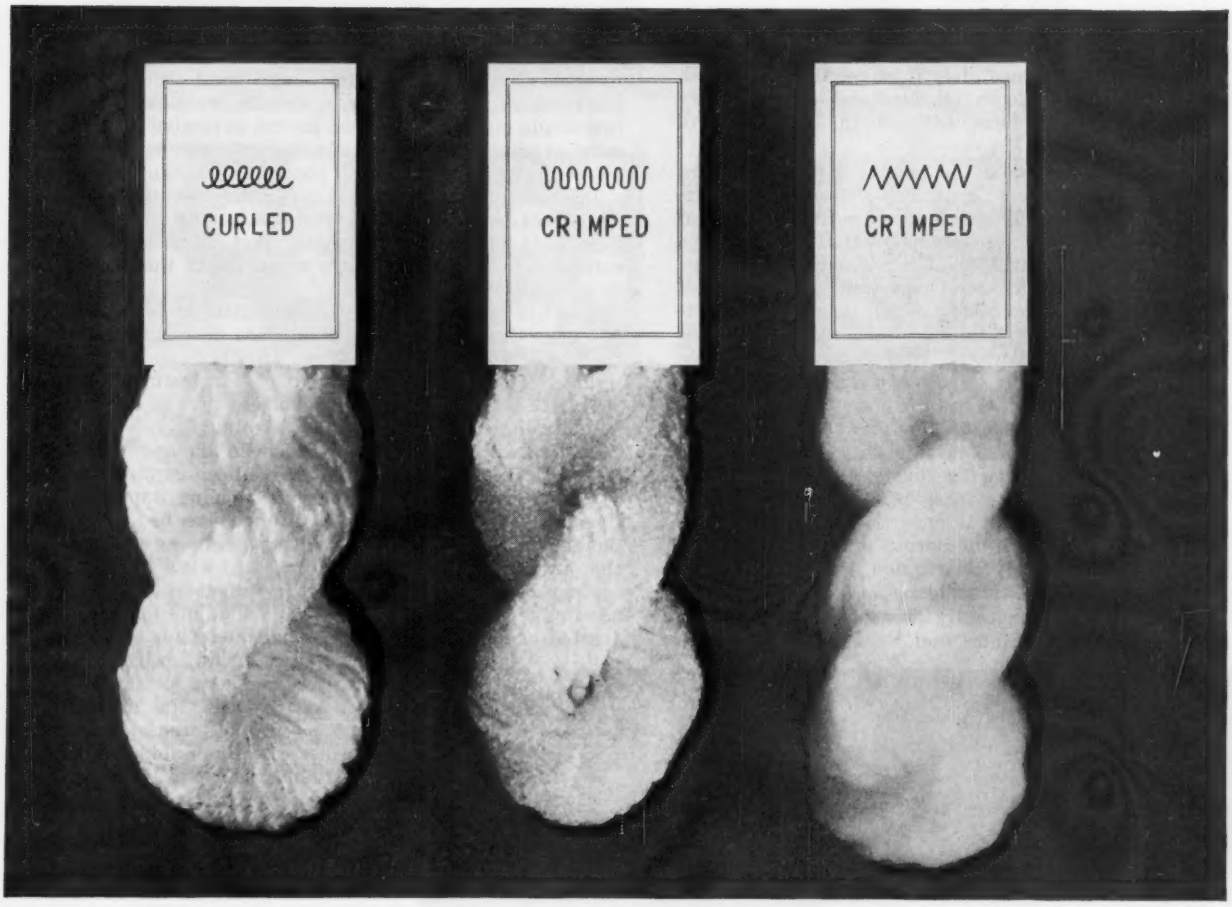
When ordering texturized filament nylon yarns, specify Caprolan, which has all the advantages of nylon plus a number of extra, important performance values!



60 yards of Caprolan 2100-112-0-0-HB heavy yarn which has *not* been texturized.

Same weight, same yarn texturized by *looping*.

a Difference *caprolan*® † Makes!



Same weight, same yarn texturized by *curling.*

Same weight, same yarn *crimped* by one process.

Same weight, same yarn *crimped* by second method.

All texturized skeins have the same number of winds and the same amount of relaxation.
For further information, technical assistance or list of sources, write us today.

caprolan®... *the performance fiber... by Allied Chemical*

Fiber Sales and Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York City 16, N. Y.

† Allied Chemical's polyamide fiber

Fluid Bed Dryer (Continued from Page 39)

of the double-pass type, in which the cloth enters the top of the drum, passes down to the bottom, then up the other side and out again at the top.

Fluidizing medium in the bed is Ballotini, (tiny glass beads of pre-determined size) although it was stated that sand has been used with fair success. Loss of the glass beads during operation is virtually nil.

It is immediately obvious that great care would have to be taken with a unit of this type that none of the fluidizing particles cling to the cloth after it leaves the drum. If this happens these particles could easily cause expensive damage to any rollers or machinery the cloth might pass through in subsequent printing or processing. British Tufting Machinery engineers. have safeguarded against this risk by incorporating a beater mechanism into the machine through which the cloth passes immediately it leaves the actual bed. The cloth is thus sharply vibrated and any glass particles which may have adhered to the cloth are thrown off.

The drum section of the unit is 6 feet deep and holds one ton of glass beads. The source of heat consists of approximately 400 steam pipes, each 1⅛-in. in outside diameter. These pass horizontally through the interior of the drum. Steam is utilized with exceptional efficiency when compared with other methods of drying, with cans or rollers; to evaporate one pound of moisture from the cloth, only 1.2 pounds of steam is required.

No exact figures are available concerning the air current used to fluidize the bed, but it is said to use a large quantity of air at a low pressure. Apparently this supply of air is one of the tricky details in the building of fluid beds. In theory there is no limit practically to the size these beds can take. But in large beds it is difficult to ensure that the air supply enters evenly through the porous plate in the base of the drum. An evenly distributed air current is an essential for even fluidization.

Fluid beds have recently aroused a great deal of interest in United States and Britain. The principle underlying their use, and the potentialities they offered, were realized in the oil industry long before World War II, and for the past fifteen years similar equipment has been used in oil cracking technology.

Since the war many other industries have investigated the possibilities. In the field of textiles, British Rayon Research Association, in 1954, undertook a comprehensive program of fluid bed development. British Tufting Machinery Ltd. is a member, with Hunt and Moscrop Ltd., Mather and Platt Ltd., Sir James Farmer Norton and Co. Ltd., F. Smith and Co. (Whitworth) Ltd., and Tomlinsons (Rochdale) Ltd., in a Fluid Bed Maufacturer's Association to work in co-operation with B.R.R.A. on this project.

This first commercial model follows patents taken out by B.R.R.A., although some modifications have been incorporated.

Applications for fluid beds, apart from straightforward drying of cloth, are many. Used for drying latex-coated nylon threads, a suitably modified fluid bed would eliminate the need for the extensive equipment at present used. Cost of a suitable unit would be a fraction of the high cost of conventional equipment.

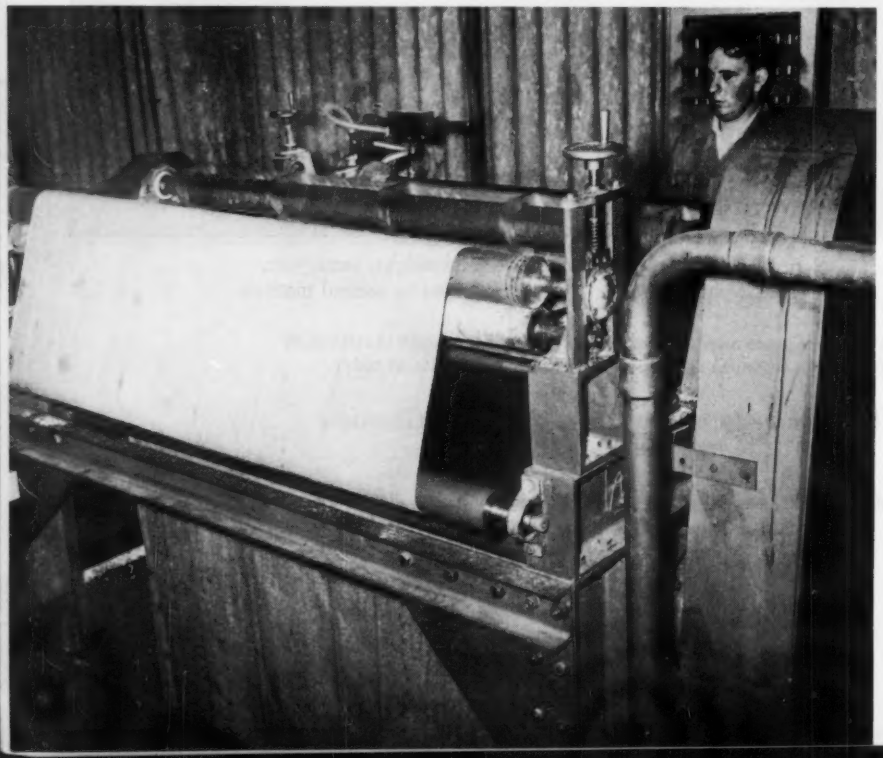
In experiments concerned with the baking-in of resin crease-resist finishes, B.R.R.A., using a prototype fluid bed, have discovered that 20 seconds is sufficient to dry off moisture and bake-in the finish in one operation.

Another channel B.R.R.A. technologists investigated has been the application of fluid beds in dyeing synthetic fibers. Results have shown it is possible to dye nylon or Terylene in a continuous process lasting from ten to 20 seconds. Providing sufficient care is shown in observing the same conditions, matching of dyed colors is a relatively simple and dependable operation.

At B.R.R.A. too, experiments have been carried out to discover whether nylon thread singeing improves dyeability. Yarn was passed through the bed, at a temperature above nylon's melting point, so rapidly that only the outside hairs of the yarn were singed.

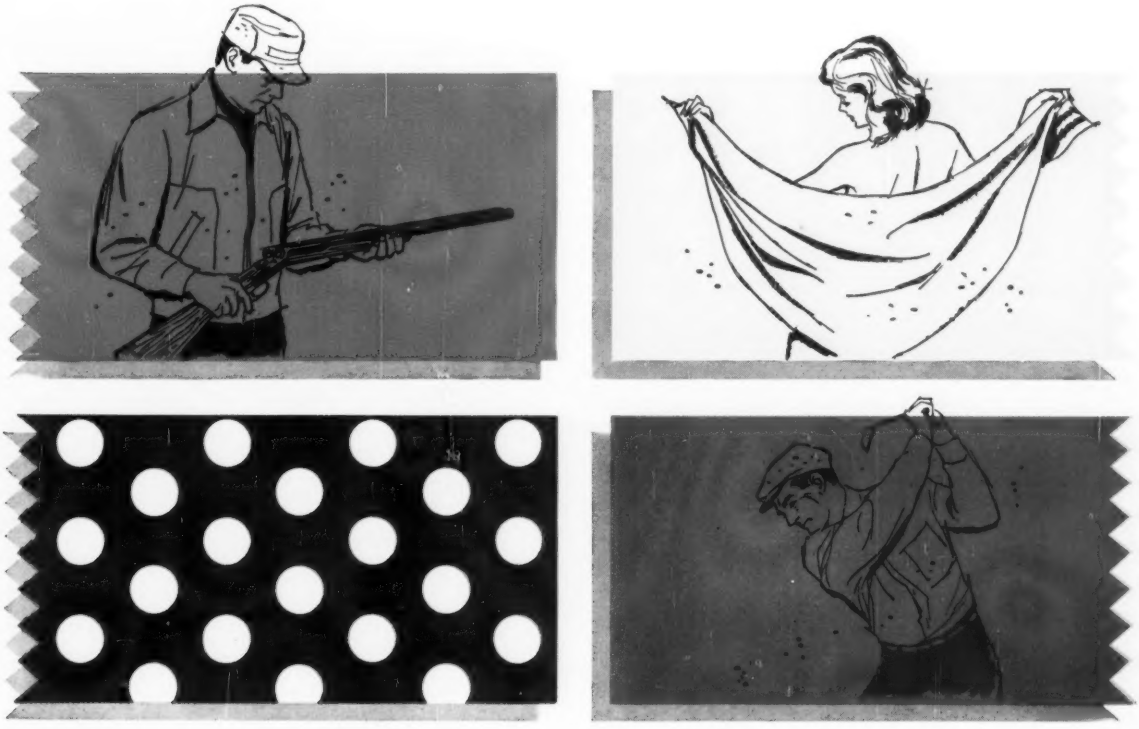
Apart from speed, one of the other outstanding advantages of a fluid bed system is that the fabric is treated on both sides at the same time. Thus danger of uneven drying, migration of color in dyeing, or migration of resin in the drying and baking of crease-resist finishes, is eliminated.

Although British Tufting Machinery Ltd. is the first company to announce completion of a commercial model, it is reported that other members of the Fluid Bed Manufacturer's Association are also constructing fluid beds. ■



NO GLASS ALLOWED—As the cloth leaves the fluid bed drying chamber, this beater mechanism vibrates it to throw off any particles of the tiny glass beads that do the actual drying. The top roller is part of the beater mechanism

use NAPHTHOL DYES by gdc



for deep, brilliant shades — all around color-fastness — high productivity at low cost

Bright reds and yellows, deep rich navies, browns, wines and blacks either too difficult or expensive to achieve with other dyes are simply and inexpensively produced with GDC Naphthols in cotton and rayon, in pad, jig or continuous systems. Acetate, Dacron* and nylon may be dyed by special processes.

Naphthol colors are fast to washing, light, chlorine, alkali and cross-dyeing. Many Naphthols are used as ground colors for discharge printing where wash- and light-fastness are required.

A complete range of highly soluble Naphthol Powders are available. However, for greater economy in high-speed, large-volume operations the prepared liquid Naphtholate AS Solution brands are generally preferred.

The Fast Color Salts and Bases used for development are reliably uniform from batch to batch and most are nondusting for cleaner handling.

Our Technical Service Laboratories are ready to advise you on how to utilize Naphthol dyes in your particular operation.

*Polyester fiber of E. I. du Pont de Nemours & Co. (Inc.)

From Research to Reality

GENERAL DYESTUFF COMPANY

A SALES DIVISION OF

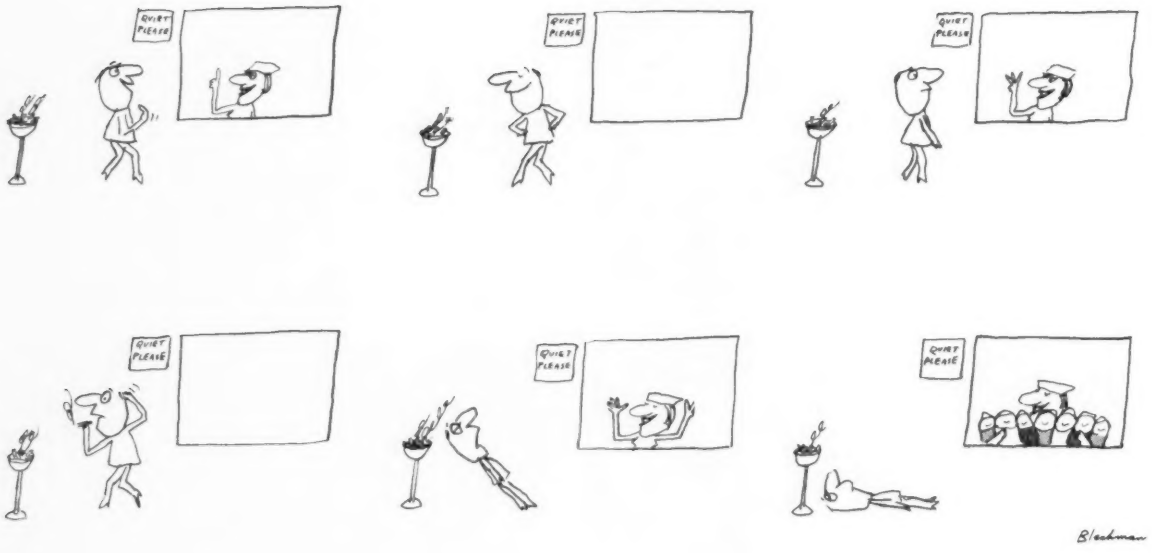
GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

Naphthol Dyes manufactured by the General Aniline and Film Corporation are sold outside the United States under the trademark "Fenaphtol."

HAPPY ARRIVALS



7 new drapery colors in Courtaulds' Coloray*... all amazingly non-fading!

AQUA, ROSE, SAGE, CRYSTAL BLUE, MOCHA, ECRU *Non-fading after 500 Fadeometer hours, proving fastness six times better than the standard for drapery colors, L6 (which means no fading after only 80 hours). South Florida sun tests now being conducted.*

DAWN PINK *Non-fading after 160 South Florida sun hours, proving fastness equal to the standard, L7.*

For the special delight of the drapery trade, Courtaulds has developed a series of light, almost luminous pastels with extraordinary colorfastness to sun and light . . . and everything. Happy colors indeed! They bring the total of Coloray basic shades to 25. They skyrocket the number of possible Coloray blends into the stratosphere. For Coloray rayon staple blends in infinite ways to produce infinite color effects. And Coloray, being a soft spun fiber, contributes a luxurious hand to fabrics for draperies, upholstery, every facet of home furnishings and fashion. It's wonderful to work with Coloray!

COURTAULDS'

COLORAY®

Solution-dyed Rayon Fiber With Captive Color . . . "Can't Escape!"

WHY SO COLORFAST? Because of Courtaulds' famous method of solution-dyeing. Color is poured into a viscose solution which flows into spinnerets and emerges as fully formed Coloray fiber. And inside, is that wonderful Coloray color. It's caged in. It can't get out.

For further information, write:
COURTAULDS (ALABAMA) INC., *first name in man-made fibers, first name in solution-dyeing,* 600 Fifth Ave., New York 20 • Greensboro, N. C. • Le Moyne Plant, Mobile, Ala.

What fluid beds can do

They promise speedier, better cloth dyeing and resin setting

THE THEORY of fluid beds applied to textile finishing as well as a report on the research leading to their practical application was given at the joint Boston meeting in October of The American Fiber Society and The English Textile Institute. In a paper prepared by J. Wilson and F. G. Audas of the British Rayon Research Association and read by Mr. Wilson, it was pointed out that a fluid bed, in its idealized form, is an assemblage of small solid particles maintained in suspension against the forces of gravity by the upward motion of a gas.

For textile applications, the British Rayon Research Association devoted its work to fluid beds consisting of particles of sand or glass spheres from 0.1 to 1 mm. in diameter fluidized by means of air. Such a bed, Mr. Wilson pointed out, constitutes a very efficient means of conveying heat, with the result that it has possible applications in the textile industry wherever the use of heat is an essential element in heat setting, drying, dyeing and finishing operations.

A fluid bed of commercial size, Mr. Wilson said, is about five or six feet deep and four feet by one foot, six inches in cross section. Such a bed holds about two tons of sand or glass beads in turbulent motion. It is therefore obvious, Mr. Wilson explained, that the handling of wet and delicate fabrics (such as an all-acetate lingerie fabric of about three ounces per square yard) through such a medium presents real difficulties. These problems, he added, have now been solved.

(*The commercial fluid bed apparatus developed by British Tufting Machinery, Ltd., described on page 39 would appear to represent the "solution" to the "difficulties" cited by Mr. Wilson.*)

It is, of course, possible, Mr. Wilson continued, to use almost any inert solid in particulate form. He and his associates, however, decided to use small glass spheres between 0.1 and 1.0 mm. in diameter because closely graded beads of these sizes could be readily detached from the fabric and showed no tendency to produce fines.

At the British Rayon Research Institute, work was started with lead glass beads because they were already on the market for use in display signs. But the Institute later succeeded in getting supplies of soda glass beads which are much cheaper and possess thermal properties which are almost identical.

Fluid Beds for Fabric Drying

In drying fabrics in a fluid bed, Mr. Wilson said, it is impossible to give evaporation rates which are absolute. Any specific design must of necessity embody a compromise between various conflicting factors. Thus, he said, at tensions of approximately ¾ pound per inch of width, spun rayon cloth four ounces per square yard in pieces 36 inches wide and approximately 200 yards long gave the following results:

Dry cloth weight lbs.	Cloth weight after wetting and mangling lbs.	Cloth weight after drying in fluid bed lbs.	Bed temp. °C	Cloth rate ft./min.	Evaporation rate lbs./sq. ft./hr.
48	98	47	160-170	130	18.4
47	97	46½	155-160	125	17.5
46	96	48	155-165	120-135	—

This particular bed, Mr. Wilson explained, was heated by gas since steam at a suitable pressure was not available. The temperature of the burnt gases on leaving the system was 200° C. when the temperature of the bed was 150° C. Normally such a system would operate at an efficiency of 85%. About 1.4 pounds of steam per pound of water evaporated would be required. Diagram One shows the design of the bed.

Resin Application

Mr. Wilson stated that in the preparation of crease-resistant material from spun viscose, the cloth is normally impregnated with a urea formaldehyde precondensate dried on a tenter frame at 90° C. The dried impregnated fabric is then baked at a higher temperature, washed and dried. A fluid bed can be used with advantage for each process or the two can be combined in a single heat treatment.

Dyeing

Disperse acetate dyes, azoic dyes, and Procion dyes can all be applied efficiently by fluid beds, Mr. Wilson said. Vat dyes and direct cotton dyes, acid and pre-metallized dyes, however, involve processes in which fluid bed treatments do not appear to offer any considerable advantage over existing methods.

In applying disperse acetate dyes, Mr. Wilson noted, the American "Thermosol" process can be applied to the dyeing of Dacron, nylon and acetate by use of a fluid bed. A cold dispersion of an acetate dye is padded on to the cloth which is then passed through the fluid bed at a temperature between 175° and 220° C. Drying and dye fixation are thus achieved in a single operation, thereby avoiding migration effects. The addition of glycerine, diacetin or triethanolamine, to the dispersion of dyestuff enhances the color yield. The usual formula employed is: 5% volume glycerine

(Continued on Page 48)

destined to skyrocket
synthetic fabric sales

FABU

THE FABULOUS NEW FINISH THAT MAKES SYNTHETIC FABRICS

FABULIZED

THE GREATEST PROFIT POTENTIAL IN SYNTHETICS SINCE NYLON

FABULIZED
gives synthetics the highest degree of absorbency ever developed — almost 4 times the absorbency of regular-finished synthetics.*

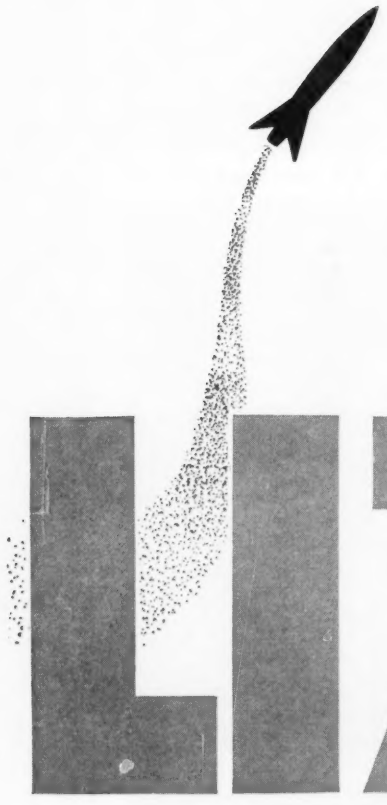
FABULIZED
eliminates perspiration clamminess and that hot, close, clinging feeling that makes synthetic fabrics uncomfortable in hot or cold weather. It enables the skin to breathe freely by instantly absorbing skin moisture.

*As tested by an independent testing laboratory

FABULIZED
needs no special mill equipment for application.

FABULIZED
costs no more to apply than standard type finishes.

FABULIZED
brings new wearing comfort to hosiery, shirts, blouses, dresses, sweaters, underwear, sleepwear and other items made of synthetic fibers.



LIZED

AND BLENDS ABSORBENT AS COTTON . . . SOFT AS SILK

PROOF

Make this simple EYE-DROPPER TEST

Water drops on FABULIZED hosiery are absorbed instantly . . . in 33.5 seconds (average).

One hour later, water drops are still on the surface of the non-FABULIZED stocking welt.

*DuPont's trademark for its polyester fiber.
**Trademark of Jos. Bancroft & Sons Co.

The high absorbency of FABULIZED answers the last major consumer objection to synthetic fabrics. FABULIZED makes nylon, Dacron*, Ban-Lon** and other synthetics more comfortable to wear. For increased sales and greater profits, test FABULIZED on your product. Licensing arrangements for the FABULIZED process are being made now. For full details:

Write, wire or phone

FABULIZED, INC.

518 South Delaware Ave., Phila. 47, Pa.

Telephone: WAlnut 5-2149

The new household word for synthetic fabric comfort

FABULIZED

Fluid Beds

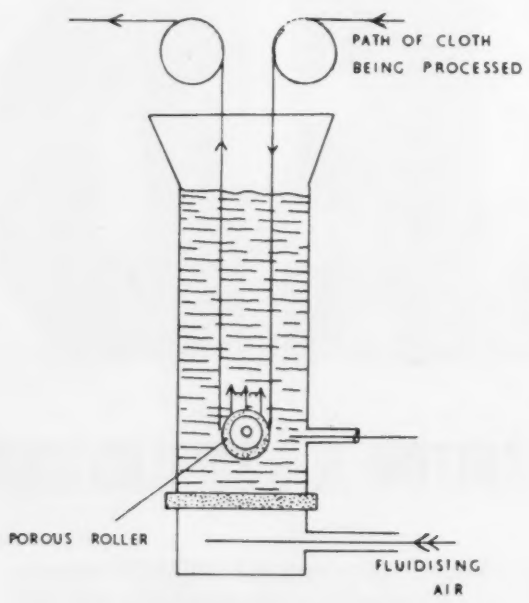
(Continued from Page 45)

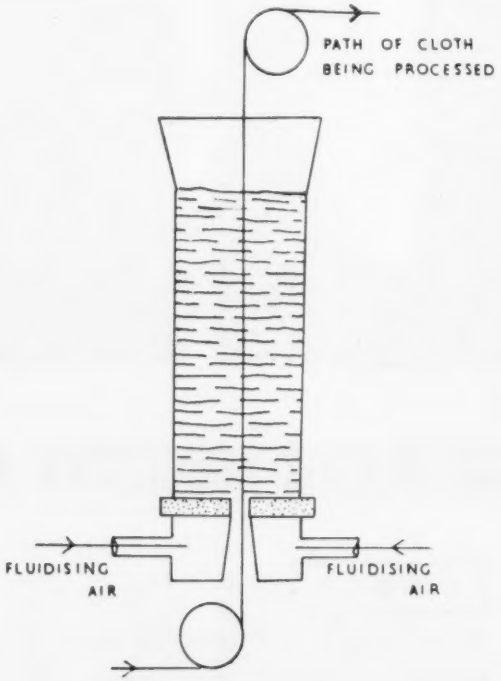
(diacetin or triethanolamine); 0.2% wetting agent; x% acetate dyestuff. The weight of dyestuff used depends on the expression at the mangle and on the depth of shade required.

Acetate dyes prepared by different manufacturers give different results because the diluent and the particle size vary. Morever, certain dispersing agents reduce dye fixation. No evidence of ring dyeing has been observed, and the washing, rubbing and light fastness of the dyed material is at least equal to that obtained by conventional methods, though on acetate and on nylon it is not as good as can be obtained by the use of azoic dyes.

All three fabrics have been dyed by this method. Nylon was the least satisfactory, some of the red shades being difficult to reproduce. On nylon the best results were obtained when the naphthol was solubilized in caustic soda. The dyed samples were fast to rubbing and washing. Particularly on nylon, the base tends to volatilize, and as a result nitrozo-naphthols are formed at a later stage and have to be removed by treatment in boiling soap solution.

An alternative process is now being tried out, Mr. Wilson said. The nylon is first padded with a dispersion of naphthol, together with 5% of glycerine. It is then heated in a fluid bed at 190°C for 30 seconds, after which it is padded with a dispersion of the selected base and steamed for a few minutes (1-6). This material is then diazotised and coupled. The





Double-Pass Fluid Bed and

(Right) Single-Pass Fluid Bed.

bases so far tried give maximum shade values with steaming times of between one and two minutes. Shades are level, and completely fast to rubbing and washing. Similar results have been obtained on triacetate.

A third method is possible in certain cases, i. e. to prepare the diazotised and coupled base and pad the dispersed compound on to the fabric, as for acetate dyes.

Azoic dyes

The normal method of dyeing cellulosic materials with azoic dyes is not applicable to materials such as Dacron and nylon, because, although it is possible, with some difficulty, to impregnate Dacron with a number of naphthols, it is impossible to impregnate with the diazotized base. The usual procedure is to impregnate with the free base and then to diazotize and couple in situ. This may take some three hours or so, using a pressure vessel.

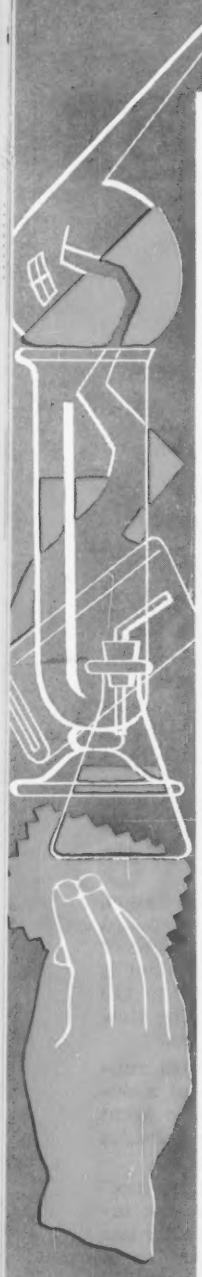
The method adopted by Mr. Wilson and his associates is a variant of the procedure used for the application of acetate dyes.

Naphthol and base are dispersed if possible in a single bath, and padded on to Dacron, nylon or triacetate, which is then passed through a fluid bed, temperature 190°C, time 15-30 seconds. Dyeing assistants such as glycerine are again used. The subsequent diazotisation and coupling requires far less time than is normally recommended.

Procion dyes

Procion dyes appear to be simple to apply and ideally suitable for fluid bed processing. A spun viscose fabric was padded with a 5% aqueous solution of Procion Red 2 BS, containing 2% sodium bicarbonate. The dye was then fixed by passing the fabric through a fluid bed at 180 C, the time of immersion being 14 seconds. Any surplus dye was removed by soaping. The dyeing was level and completely fast to washing and rubbing tests. Other Procion dyes applied in the same way gave precisely the same results. ■

DYEING and FINISHING SECTION



BLEACHING
PRINTING
SPECIAL
PROCESSING

VATS

THAT VARY NOT FROM BATCH TO BATCH

Geigy TINON* COLORS

Here are colors that refute the statement, "All vats are alike." Until you've experienced the extremely good dispersion qualities and the uniform particle size of these Geigy Vats in practice you'll never know what excellent results you can obtain. And, they're equally effective in all forms of dyeing.

Since one trial is worth a thousand words get in touch with your Geigy representative and counsel with him regarding your needs.

GEIGY DYESTUFFS
Division of Geigy Chemical Corporation, Saw Mill River Road, Ardsley, New York
Branches in all Textile-Producing Centers

GEIGY

dyestuff makers since 1859

*Geigy Registered Trademark

How to finish Orlon blankets

By K. D. Houser & L. Bidgood, Jr.
THE DU PONT CO.

AMONG the most interesting of the varied manifestations of the finisher's art are napped or raised face fabrics. Finishing effects a complete transformation of these cloths. For example, a blanket fabric immediately off the loom has a thready and coarse appearance with little apparent insulating power. After finishing, a warm, lofty blanket fabric has been created; the original fabric is unrecognizable.

In spite of its fascinating aspects, the art of finishing napped fabrics has received little attention in technical literature, and little has been written about finishing napped fabrics of the newer synthetic fibers.

During the past two years, the Du Pont Co. has carried out a systematic investigation of finishing processes for blankets and woven fleeces of its Orlon acrylic fiber, a study which is still being continued. The results have suggested that only a small fraction of the finishing possibilities have been explored. However, certain principles have emerged which can be of use to the finishing industry at this time and are presented here as a progress report.

Fabric Construction

Staple length, staple denier, yarn count, twist, and fabric construction all govern the results that can be obtained in finishing a blanket fabric of Orlon acrylic fiber. A complete discussion of the effects of these variables is outside the scope of this report. Early in this work a number of blanket fabrics of 100% Orlon were evaluated. One construction was chosen which gave good results and is representative of what the trade might manufacture. Using this construction as standard, a number of finishing variables were studied. This fabric was made with woolen spun filling of 100% Type 39 Orlon, with a warp of 100% Type 42 Orlon spun on the cotton system. Type 39 Orlon consists of a blend of deniers and staple lengths especially prepared for the woolen system of spinning. Staple lengths in this blend range from 1¼ inches to 3 inches with an average length of 2½ inches. Deniers range from 2 to 6, including 3 and 4.5 denier with an average denier of 4.2 (by weight).

The following construction was used:

Warp yarns:	18/1 cc 12.5 turns per inch Z twist 3 denier per filament 2½ inch 100% Type 42 Orlon
Filling yarns:	2 run 7 turns per inch Z twist 100% Type 39 Orlon

Weave: 3 x 1 double woven

Loom count: 36 ends 41 picks

Cloth Preparation and Dyeing

A typical procedure for the scouring, dyeing, and application of finish to a blanket fabric of 100% Orlon would be:

1. *Scour*—This operation is usually carried out in the dye beck. Normally a 20-minute scour with one per cent (on weight of fabric) of a non-ionic detergent such as "Alkanol" HCS surface active agent is employed. Heavily soiled goods may be scoured at higher temperatures for longer times, and a buffer such as tetrasodium pyrophosphate (TSPP) may be added to the bath. Yarn— or stockdyed fabrics can be scoured in the same manner, followed by application of a cationic finish.

2. *Dye*—The fabric is beck dyed in a fresh bath at 205 to 212 degrees F. Disperse (acetate) dyes are generally used for pastel shades and cationic or basic dyes are employed for all other shades*. Bleaching is unnecessary for whites or pastels because of the good natural whiteness of Orlon.

3. *Cool slowly*—The bath is cooled by radiation, that is, the steam is shut off, beck doors are opened and the reel is kept running until a temperature of 170 degrees F. is reached. At this point cold water is added slowly to bring the temperature down to 110 degrees F. The fabric is then rinsed clear. The slow cooling prevents the formation of rope creases.

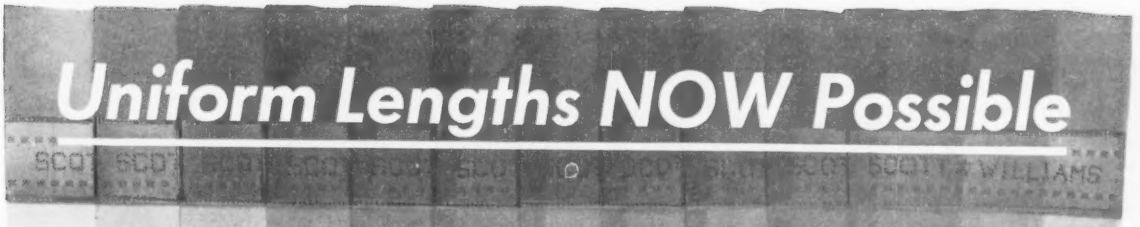
4. *Scour*—Heavy shades are scoured for 20 minutes at 160 degrees F. using one per cent of a detergent such as "Alkanol" HCS surface active agent and one per cent acetic acid. Medium and light shades generally do not need scouring after dyeing.

5. *Apply finish*—A cationic finish such as "Avitex" NA softener provides both static protection and lubricity for good napping performance. Normally one per cent of "Avitex" NA is applied for 20 minutes at 110 to 120 degrees F. from a bath containing one per cent acetic acid (56%). The bath is then dropped and the goods are drained without rinsing.

6. *Dry*—The goods are extracted and frame dried at taut width. A considerable width shrinkage occurs in napping, and it is desirable to frame the goods out as wide as possible, usually six to eight inches wider than the wet width. This reduces the net loss in finishing. Dryer temperatures of 220 to 250 degrees F. are normal for Orlon acrylic fiber. Higher temperatures have been used successfully, but there is a risk of yellowing the fabric if it should remain in the dryer

* A complete technical discussion of the dyeing of Orlon is found in the Du Pont Textile Fibers Technical Information Bulletin OR-51.

Uniform Lengths NOW Possible



Your finest, sheerest nylon hose will finish to just the lengths you plan with the new patented *I.S.D. LENGTH CONTROL ATTACHMENT.

Actual production of several thousand Scott & Williams KN machines equipped with I. S. D. Length Control did not vary beyond one-half inch in length.

The I. S. D. Length Control can readily be built into Scott & Williams KN machines — before shipment or already in place in your mill.

Reduces fixers' time
Reduces pairing time
Reduces cost

SCOTT & WILLIAMS, INC.

MAIN OFFICE & PLANTS, LACONIA, NEW HAMPSHIRE

SALES OFFICE, EMPIRE STATE BLDG., NEW YORK 1, N.Y.

DIVISIONAL OFFICES - HIGH POINT, N.C. - READING, PA. - CHATTANOOGA, TENN.

* PATENT RE. 24,239

at elevated temperatures after the moisture has been removed. Following drying, the goods are ready for napping.

Principles of Napping

Blanket fabrics of Orlon are napped dry and best results have been obtained on double-action nappers. The schematic diagram of Figure 1 illustrates the principal parts of a double-action napper. The main cylinder revolves in the same direction as the cloth travels, but the surface speed of the main cylinder is much greater than the speed of the cloth. Both speeds are normally fixed.

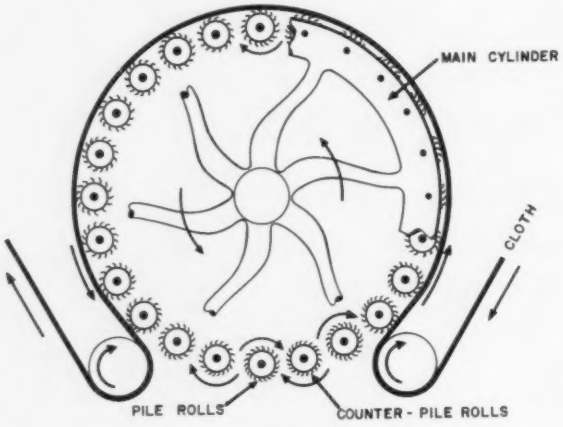


Fig. 1—Double-action Napper

The napper or worker rolls, usually 24 in number, are mounted on the periphery of the main cylinder and are carried in the same direction as the cloth travel, but at a much more rapid speed. These napper rolls are covered with wire clothing similar to card wire. Bent wire is used and the pile rolls have the wire points aimed in the direction of the cloth travel, while the counterpile rolls have the wire points aimed in the direction opposite to the cloth travel. In addition to rotating about the main cylinder, the napper rolls are also driven to rotate on their own axes in the direction opposite to the cloth travel.

Two separate drives power the rotation of the napper rolls, one for the pile rolls and one for the counterpile rolls. Variations in the speed of rotation of the pile rolls and the counterpile rolls are the principal means for controlling and varying the napping action.

The relationship between the linear speed of the wire points and the surface speed of the cloth governs the results obtained in napping. Considering only the motion imparted to the napper rolls by the rotation of the main cylinder, it is apparent that the surface speed of the wire points resulting from this motion is faster than that of the cloth. Since the napper rolls are driven to rotate on their own axes in the direction opposite to that of the cloth and the main cylinder, an increase in the speed of the napper-roll drive will diminish the difference between the surface speeds of the wire points and the cloth. Speeding up the rotation of the napper rolls (about their own axes) causes the surface speed of the wire points eventually to become exactly equal to the speed of the cloth. This condition is known as zero energy. Theoretically neither napping nor felting (tucking of the fibers back into the cloth) occurs with the napper rolls at a setting of zero energy.

Since the wire points of the pile rolls are pointing in the direction of the cloth travel, they will bite into the cloth with a napping or a plucking action which raises the fibers if the linear speed of the pile-wire points is greater than the cloth speed. Such a condition is known as positive energy with the pile rolls. To establish a condition of positive energy, the pile-roll drive is decreased in speed from the setting required for zero energy. This has the effect of producing a greater linear speed of the wire points compared to the speed of the cloth, and hence napping or raising occurs. This statement becomes understandable if one refers to Figure 1, and remembers that the motion of the main cylinder is in the same direction as the cloth travel, but faster than the speed of the cloth. The pile-roll drive causes the pile rolls to rotate about their own axes in the direction opposite to the cloth travel.

Because the counterpile rolls have their wire pointing in the direction opposite to the cloth travel, the counterpile wire will dig into the cloth and napping will occur when the surface speed of the wire points is slower than that of the cloth. Such a condition is called positive energy on the counterpile rolls and is achieved by increasing the drive and hence the speed of rotation of the counterpile rolls faster than that required for zero energy.

Felting or Tucking

Felting or tucking is the opposite of napping; fibers are pushed back into the cloth in an action similar to that of a needle loom. Felting or tucking can be done with either or both the pile and the counterpile rolls and will occur when the linear speed of the wire on the pile rolls is a little slower than the speed of the cloth. This condition is referred to as negative energy on the pile rolls. When the pile rolls are at zero energy, an increase in their speed of rotation will produce a condition of negative energy and hence felting or tucking. The opposite is true of the counterpile rolls; from a condition of zero energy, their rotation must be slowed to attain negative energy and hence tucking or felting.

The napper roll drives on double action nappers are powered and controlled by various devices, depending on the make and model of the machine. Cones, pulleys, gears, chains, Reeves drives and hydraulic drives are used. An experienced operator becomes well acquainted with the settings and adjustments necessary on a particular machine for positive energy, zero energy and negative energy on both the pile and counterpile rolls. Since these settings depend on the surface speed of the cloth the skilled operator will frequently adjust by ear, listening for the characteristic sound that is produced when the napper rolls are at zero energy.

The type and condition of the napper wire are important in determining the results obtained. To date no systematic study has been made of the effects of various types of wire on Orlon acrylic fiber, but type 30 to 34 stainless has been used satisfactorily. Freshly sharpened wire has barbs which are produced in grinding. It is customary and desirable to "break in" newly ground wire by running a hard leader fabric, such as a heavy cotton duck, over the napper to wear off these barbs which would otherwise tend to cut and tear the fibers during napping.

(Continued on Page 54)

Two Reasons Why the Textile Industry Looks FIRST *to* "NATIONAL"...

FOR THE MODERN WAY TO MEET ALL ITS DRYING EQUIPMENT NEEDS

Leadership IN DRYING TECHNOLOGY PROGRESS

During the past thirty-seven years, "NATIONAL" research and design engineering have given to the Textile Industry consistently new concepts of drying procedures and equipment. Drying speed, efficiency and quality of textiles in all forms—from fibre to finished goods—have been revolutionized due in large measure to the patented features of "NATIONAL" design and construction.

One Source FOR ALL TYPES OF DRYING EQUIPMENT

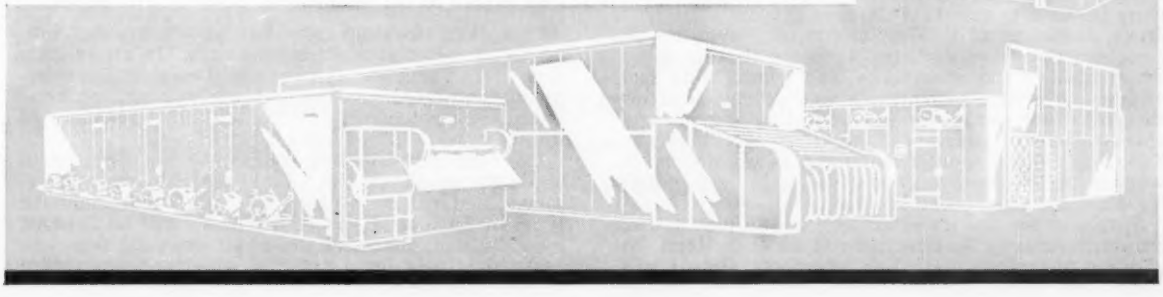
The list of "NATIONAL" dryers and conditioning units covers the full range of the Textile Industry's requirements—Piece Goods, Print Goods, Tenter, Roll, Carpet, Skein, Yarn, Rayon Cake, Package Yarn, Stock and Swatch Dryers; Nylon Heat Setting Machines.

Case histories of typical installations in the categories mentioned above will be gladly submitted upon request.

THE NATIONAL DRYING MACHINERY COMPANY

LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent: JONES & HUNT, INC., Gloucester, Mass.
Cable Address: "NADRYMA"—W.U. Code



It was found to be desirable early in this work to produce a relatively erect pile or nap, that is, to avoid directional effect or lay of the pile. A nap of Orlon having a directional effect or lay is difficult to tuck back into the surface. The relatively erect pile resists mussing or surface distortion in use better than one having a pronounced lay.

Napping Blanket Fabric of Orlon

Napping blanket fabric of Orlon can be divided roughly into four phases. There is a gradual transition between these four operations with no clear dividing line between them. Under each phase of operation are listed suggested conditions which have repeatedly given good results in terms of an attractive blanket which performs well in use. Undoubtedly there are other procedures which might give equally satisfactory results.

1. *Breaking*—The first breaker run is made with equal positive energy on both the pile and the counterpile rolls. A medium energy setting is normally employed. If the goods are soft, that is, have short staple length, a relatively low twist in the filling yarns, or a relatively low pick count, a lower pile and counterpile energy setting should be used. On the other hand, goods having a high filling twist, tight construction or long staple length require more energy to raise the fibers in the breaker runs. After about two breaker runs with balanced energy, a relatively straight and fairly deep, erect nap should be obtained.

2. *Napping*—During this phase a dense, short nap or bottom cover is produced. The napping runs are made with unbalanced energy. Greater energy is used on the counterpile rolls than on the pile. To obtain this unbalanced setting, the energy on the pile rolls is decreased or if the goods are difficult to nap, the positive energy on the counterpile rolls is increased while the setting on the pile rolls is maintained.

This use of primarily counterpile energy in the napping phase gives a shorter, denser, more erect finish than can be obtained using primarily pile energy. With greater pile energy, a longer, relatively shaggy and more directional nap would result. One or two runs are usually enough with this setting, depending on the density of nap obtained.

3. *Smoothing*—Prior to this phase of the nap has been pretty well established and the next one or two runs can be considered as smoothing or evening the pile. The pile rolls are set at negative energy and the counterpile rolls are set for slight positive energy. Napping continues with the counterpile rolls while the pile rolls are felting or tucking. This has the effect of tucking back the long fibers while the density of short fiber cover is further improved.

4. *Felting*—The final operation is felting or tucking. One or two runs are made with negative settings on both the pile and counterpile rolls. The purpose is to tuck back in any long "wild" fibers which project from the nap after the previous runs.

The following table summarizes the suggested operations in producing blankets of Orlon acrylic fiber on a double action napper:

1. **Break in about two runs using balanced, moderate energy on the pile and counterpile rolls.**
2. **Make one or two passes using unbalanced energy, greater positive energy on the counterpile than the pile rolls.**
3. **Make one or two runs using low positive energy on the counterpile rolls with slight negative energy on the pile rolls.**
4. **The final one or two passes are made with negative energy settings on both the pile and the counterpile rolls.**

Blanket finishers experienced with natural fibers will probably recognize that the main innovation of this procedure is the emphasis on counterpile napping. In other respects, the napping of fabrics of Orlon is similar to the napping of natural fibers.

New Finish Adds to Garment Comfort

A new finish has been introduced which promises to make garments of the newer man-made fibers more comfortable to wear. Tradenamed "Fabulized," the finish will achieve its effect by increasing the absorbency of such fabrics by as much as four times, according to John L. Fancourt, president of Fabulized, Inc., the company which owns the process and will license its use. Fancourt is also president of W. F. Fancourt Co., the Philadelphia textile chemical firm.

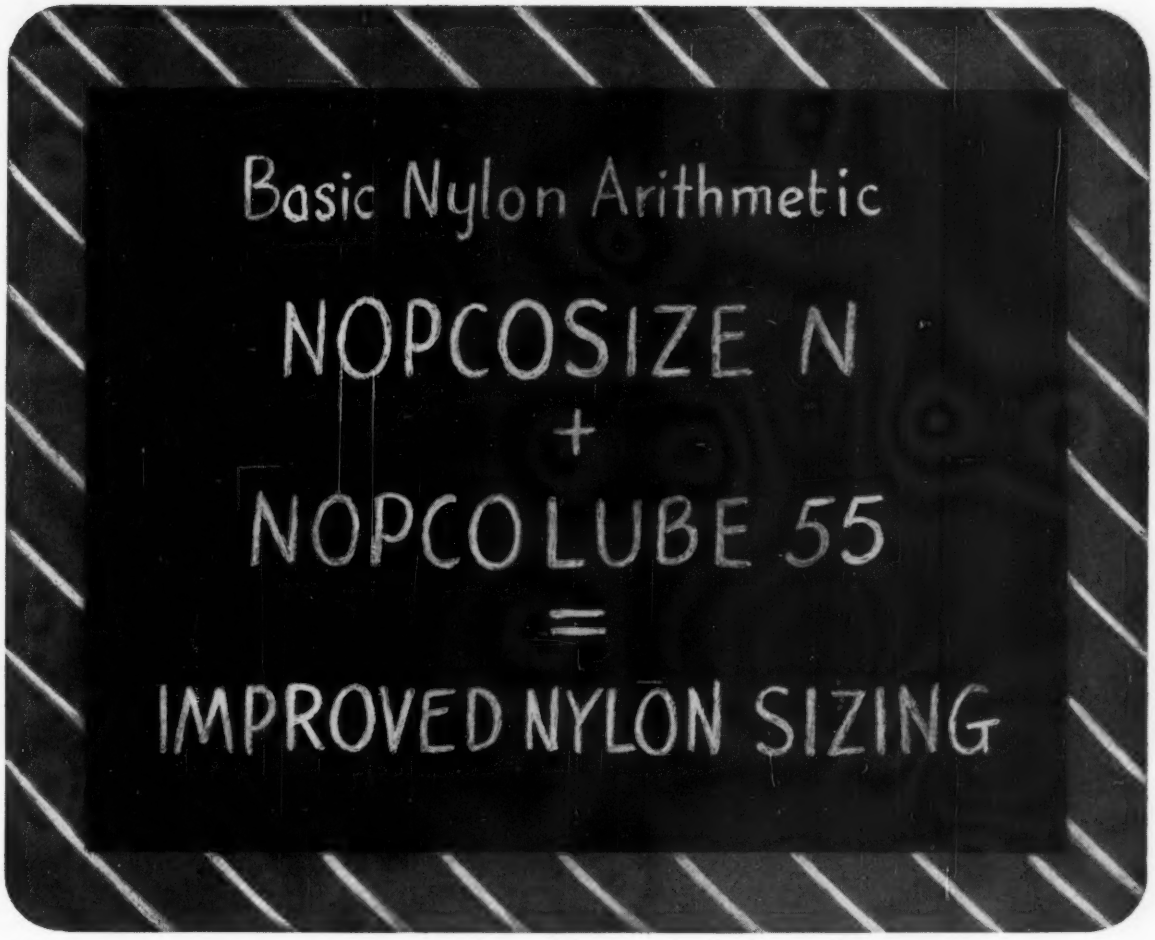
The new finish will reach consumers for the first time on women's nylon hosiery. Laughlin Full Fashion Hosiery Mills, Inc., Randleman, N.C., is the first company licensed to use the Fabulized process. The new finish, according to E. W. Welborn, Jr., treasurer of Laughlin, has demonstrated in tests that it gives nylon hosiery the absorbency and comfortable feel of silk and cotton without affecting nylon's superior sheerness and durability. In providing the missing characteristic of absorbency for nylon stockings, the Fabulized finish should stimulate new interest in women's nylon stockings and give the hosiery industry a needed sales boost, Welborn said.

Speaking for the manufacturer of the new finish, Fancourt foresaw its effective use on such items, in addition to hosiery, as girdles, brassieres, slips, men's underwear, shirts, sleepwear, women's blouses, lounge wear, dresses, sheets and piece goods made of man-made fiber fabrics.

According to tests made by an independent testing company, the Fabulized finish gives synthetics approximately four times the absorbency of similar fabrics finished without use of Fabulized. When used on fabrics made with nylon and other newer man-made fibers, the new finish eliminates "perspiration clamminess and the hot, clinging feeling associated with clothing containing these fibers, Fancourt stated.

The test method used by the independent testing agency consisted of dropping swatches of Fabulized and regular-finished nylon hosiery fabric from the welt area of stockings from a height of one inch into a tray of water at room temperature. In an average time of 33.5 seconds, the Fabulized swatch was completely saturated. At the end of one hour, the non-Fabulized swatch was still floating on the surface of the water.

Conventional finishing equipment can be used to apply the new finish and no extra machinery is necessary. The finish costs no more to apply than standard types of finishes. Users of the finish will be licensed by Fabulized, Inc., and the small licensing fees will be used largely for a national advertising campaign to publicize the advantages of the finish.



. . . and by improved we mean

1. Exceptionally flexible, well lubricated warp
2. Superior split at higher slashing speeds
3. Completely eliminates the need for top waxing
4. Seconds drastically reduced to absolute minimum

1907–1957 *50 Years* OF PROGRESS IN CHEMISTRY

NOPCO

Today... the combination of NOPCOSIZE N† + NOPCOLUBE 55† in the size pan is acknowledged to be the most successful technique for sizing producer's twist nylon.

It makes sense (and dollars*, too, of course) to let this Nopco team go to work for you.

We'll supply enough for a trial run to prove our point—see for yourself. Write Nopco Chemical Company, Harrison, N. J.

†Trademark of Nopco Chemical Co.
*See points 2, 3 and 4 above

Plants: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif. • London, Canada

REPORT FROM EUROPE

BY SPECIAL CORRESPONDENT

Cotton men receptive to man-made fibers; Terylene output to rise; Farben offers "fully absorbent" nylon

LONDON—The 17-nation Conference of International Federation of Cotton and Allied Textile Industries, which recently met in Venice, showed keen interest in man-made fibers. These principal points were made: By federation president, W. T. Winterbottom of United Kingdom— "I believe that inter-fiber rivalry can only be a healthy stimulus to technical improvements. Whether any single fiber can hold its own in the future will depend upon the relative price and the stability of price of the raw material, along with the quality of the finished product that can be made from it."

US Cotton Policy Hit— But Winterbottom criticized the U. S. for lack of a coherent cotton policy. He said U. S. policy has contributed to world cotton instability which, in turn, has helped man-made fibers at expense of cotton goods.

William J. Erwin, president of Dan River Mills, tended to agree with Winterbottom that "a more realistic price policy will regain for cotton many markets which have been lost." He referred to opportunities implicit in chemical finishing and fiber property modification to secure "weather resistance, heat resistance, flame proofing." He saw a bright future for cotton laminates for strength in rubber and plastic products.

Silent Approval for Japan— Kojiro Abe, chairman of the All-Japan Cotton Spinners Association, introduced a calming note in the world textile battle by assuring the Venice meeting that his country does not expect to boost cotton and rayon yarn-making capacity for some time to come. Japan has over nine million cotton and nearly three million rayon spindles. This should be, a little more than sufficient to meet the estimated demand for cotton and spun rayon goods at home and abroad," Abe said. He also spoke of Japan's export restraints.

New ICI Capacity Boost—England's Imperial Chemical Industries plans to spend some 20 million pounds sterling ($56 million) to boost Terylene capacity from 30 million pounds to 50 million a year. The Wilton plant will be expanded. ICI will drop its Ardil peanut protein fiber production. Courtaulds, however, will go on with its Fibrolane protein fiber.

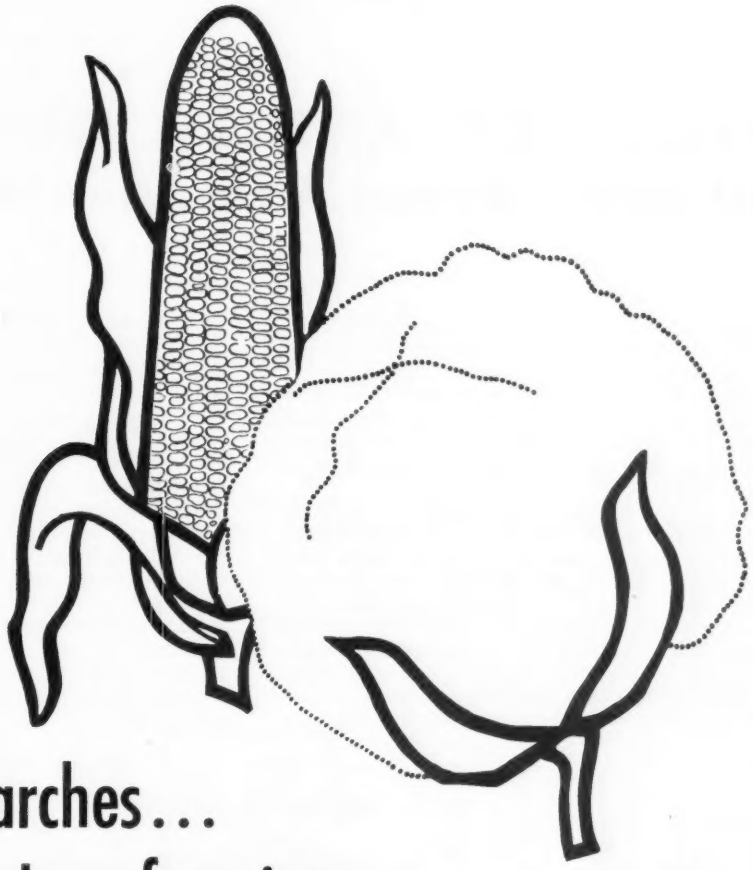
ICI and its Argentine affiliates will build a $3.5 million plastics plant, near Rosario, with a 4,000 ton annual capacity. Celulosa Argentina is also involved in the venture. Also in Argentina, Electroclor will build a 10 million pound polyvinylchloride plant at Capitan Bermudez, Sante Fe Province. ICI helped with planning. Production may increase as plastics demand rises.

German Absorbent Perlon Made— Farbenfabriken Bayer, Leverkusen, states it has developed a fully absorbent Perlon. The process used was said to be suitable for other polyamides. The demonstration was made at Lippstadt at the annual meeting of companies licensed for Christian Dior hosiery. The cost was said to be somewhat higher than ordinary yarn.

UK Active in Trade Fairs— British man-made textiles were shown at several recent European trade fairs, including Helsinki (mainly machinery); Vienna (prize winning textile designs); Stockholm (Terylene promotion at a cost of nearly $3 million), and Frankfurt (new cotton, silk and man-made fabrics).

Nylon for Wine Storage— Faced with a shortage of wine storage tanks, the Portuguese government came up with neoprene-lined Nylon containers capable of holding 330,000 liters (over 80,000 gallons) of wine. The first Nylon wine tank took two days to manufacture.

(Continued on Page 60)



C. P. Starches...
Try 'em for size

CLARO® · GLOBE® · EAGLE® · FOXHEAD®
TEN-O-FILM® · GLOBE® DEXTRINES

Whether you seek reduced breakage of yarn on slasher or looms...improved sizing or desizing of spun rayons, blends or synthetics...more effective and economical re-starching, printing or back-filling...Corn Products' Technical Staff can be of real service.

Years of experience in textile sizing applications in our modern laboratory at Greenville, S. C. and our unique Pilot Plant Slasher Assembly which is sponsored by Corn Products Fellowship program at the Mellon Institute, Pittsburgh, can help you solve your problems.

Feel free to consult with our nearest sales office, or write to:

CORN PRODUCTS SALES COMPANY · 17 Battery Place, New York 4, N.Y.

AATCC 36th ANNUAL CONVENTION

Hotel Statler, Boston, Mass., Nov. 14-16

A RECORD TURNOUT of dyers, finishers, textile mill people and dyestuff manufacturers is expected at the annual convention of the American Association of Textile Chemists and Colorists to be held Nov. 14 to 16 at the Hotel Statler in Boston. The commercial exhibits to be staged in conjunction with the convention will be varied and rich in interest, according to advance reports.

The convention, the 36th in the history of AATCC, is being held under the auspices of the association's New England Region made up of the Northern New England, Rhode Island and Western New England sectional groups. In addition to the commercial exhibits and the usual program of technical discussions and papers, the convention will be marked by a number of special events for members, guests and their wives. Among these will be tours of historic places in the Boston vicinity and a "Pop" concert of the Harvard University Band and Glee Club.

Registration will be held Thursday, Nov. 14 with technical sessions planned for both morning and afternoon. Also on Thursday afternoon, Lowell Technological Institute will hold an open house including the AATCC's research and administrative headquarters. On Friday, Nov. 15 the Olney Award Luncheon will be held with P. J. Wood, this year's Olney medalist, as guest of honor.

The intersectional prize paper contest will be held on Friday afternoon with five sections of the association already having signified their intention to participate. Information on Saturday's technical sessions will be released on Thursday, Nov. 14. On Saturday evening, Nov. 16, the annual banquet will be held. At the banquet special recognition and honor will be given to some 70 charter members of the association.

LIST OF EXHIBITORS

ALCO OIL & CHEMICAL CORP., PHILADELPHIA, PA.—(136-137)

EXHIBIT: Vulcanol latex compounds and Trenisol resin compounds for upholstery and carpet backsizing, bonding nonwoven fabrics; impregnation and saturation; Vulcarite latex compounding chemicals in dispersed form; Vulcacure ultra accelerators in dispersed form; Vulcafoam latex foam rubber compounds for textile applications; and Alcogum synthetic gum thickeners, latex stabilizers, and ajuvants for warp sizing synthetic yarns and blends of natural and synthetic fibers.
IN ATTENDANCE: F. M. Tolin, O. B. Hager, J. P. Seguin, J. M. Allan, J. B. Winkler, R. P. Restrepo, D. L. Worth.

AMERICAN ANILINE PRODUCTS, PITTSBURGH, PA.—(371)

EXHIBIT: A number of their classes of dyes, including vats, vat Disperscons, naphthols, wool dyes, dyes for acetates and synthetic fabrics. Actual fabrics dyed with these dyes.
IN ATTENDANCE: T. C. Keeling, Jr., J. J. Marshall, R. A. Gopel, D. E. Marnon, R. W. Freeze, K. C. Ruppenthal, J. H. Orr, F. S. Stover, R. W. Brewer, E. K. Bush, O. J. Pemberton, H. Gorton, H. K. Goerner, David C. Fitton, Alfred Brown, N. Pratt and S. Wilson.

AMERICAN DYESTUFF REPORTER (see Howes Publishing Co.)

AMERICAN SOCIETY FOR TESTING MATERIALS, PHILADELPHIA, PA.—(17)

EXHIBIT: Book of Standards, numerous books of technical information, its Cotton Yarn Appearance Standards, and related publications of interest to the textile industry.
IN ATTENDANCE: Fred F. Van Atta and Paul J. Smith.

ATLAS ELECTRIC DEVICES CO., CHICAGO, ILL.—(144)

EXHIBIT: Random Tumble Pilling Tester and Model DMC Twin Arc Weather-Ometer.
IN ATTENDANCE: John W. Lane, J. E. Norton and M. J. Babey.

BUSCHMAN PRODUCTS INC., NEW YORK, N. Y.—(139)

EXHIBIT: Two new models of their Jet-Mogenizer homogenizers, involving new principles in improved homogenization.
IN ATTENDANCE: N. H. Buschman, N. Lieblich, A. W. Bailey and J. McLaughlin.

CELANESE CORP. OF AMERICA, NEW YORK, N. Y.—(25-26)

EXHIBIT: A dyeing technique which provides multi-color effects including plaids by an inexpensive one-bath piece dyeing process; a pad-steam process applicable to Arnel for the continuous dyeing of Arnel/cotton blends, using cotton dye house procedures, resulting in novel styling effects of good fastness properties at low costs; their "S" Antistatic process for rendering Arnel and Arnel-containing fabrics permanently antistatic. Also fabrics produced by these processes.
IN ATTENDANCE: C. S. Clutz, F. Fortess, W. Schoeneberg, A. F. Tesi, G. C. Ward, P. C. Duggan and B. F. Pimentel.

THE CHEMSTRAND CORP., DECATUR, ALABAMA—(3-4)

EXHIBIT: Fabrics of Acrilan acrylic fiber and Chemstrand nylon dyed in assorted colors; Chemnyle process for dyeing filament nylon; a new, as yet undisclosed dyeing process for Acrilan-wool blends.
IN ATTENDANCE: Walter H. Hindle, E. V. Burnthall, Dr. Cecil Gayler, Lamar Beach, G. A. Poovey and W. C. Privette.

CIBA COMPANY, INC., NEW YORK, N.Y.—(105-106)

EXHIBIT: Their Cibacron dyes in dyeing and printing; Microfix Pigments for dyeing blends of synthetic fibers.
IN ATTENDANCE: E. L. Caswell, Fernand Schlaeppi, Fritz Raff and E. Pierce Ward.

CLEWORTH PUBLISHING CO., INC., COS COB, CONN.—(109)

EXHIBIT: Publication "Textile Age".
IN ATTENDANCE: A. P. Gumaer.

COMERIO ERCOLE S.p.A. represented by ELMO INTERNATIONAL, NORTH BERGEN, N. J.—(23)

EXHIBIT: Showing of film of their 10-color automatic Screen Printing machine. Brochures of the entire line of Comerio Ercole textile machinery will be available.
IN ATTENDANCE: M. Vallen, E. Vallen, E. Comerio and S. Comerio.

CUSTOM SCIENTIFIC INSTRUMENTS, INC., KEARNY, N. J.—(115)

EXHIBIT: Model of their FRL Environmental Test Chamber, Cohesion Tester, Visual Tear Tester, Flex Tester, and Wrinkle Tester.
IN ATTENDANCE: H. J. Bultman, Jr.

DAILY NEWS RECORD (See Fairchild Publications)

DIAMOND CRYSTAL SALT CO., ST. CLAIR, MICH.—(121)

EXHIBIT: Their calcium-magnesium free type salt and granulated evaporated salt, their Jefferson Island crystal rock salts in fine and coarse.
IN ATTENDANCE: Whittaker Lonsdale, C. W. Schornstheimer, E. D. Gildersleeve, G. F. Chadwick, F. X. O'Brien and F. L. Cotter.

DOW CORNING CORP., MIDLAND, MICH.—(103)

EXHIBIT: Their Syl-mer and Syl-soft types of silicone finishes and softeners.
IN ATTENDANCE: F. L. Dennett, R. A. Ford, J. J. O'Neil, W. T. Rossiter, W. D. Dicome and R. E. Knopf.

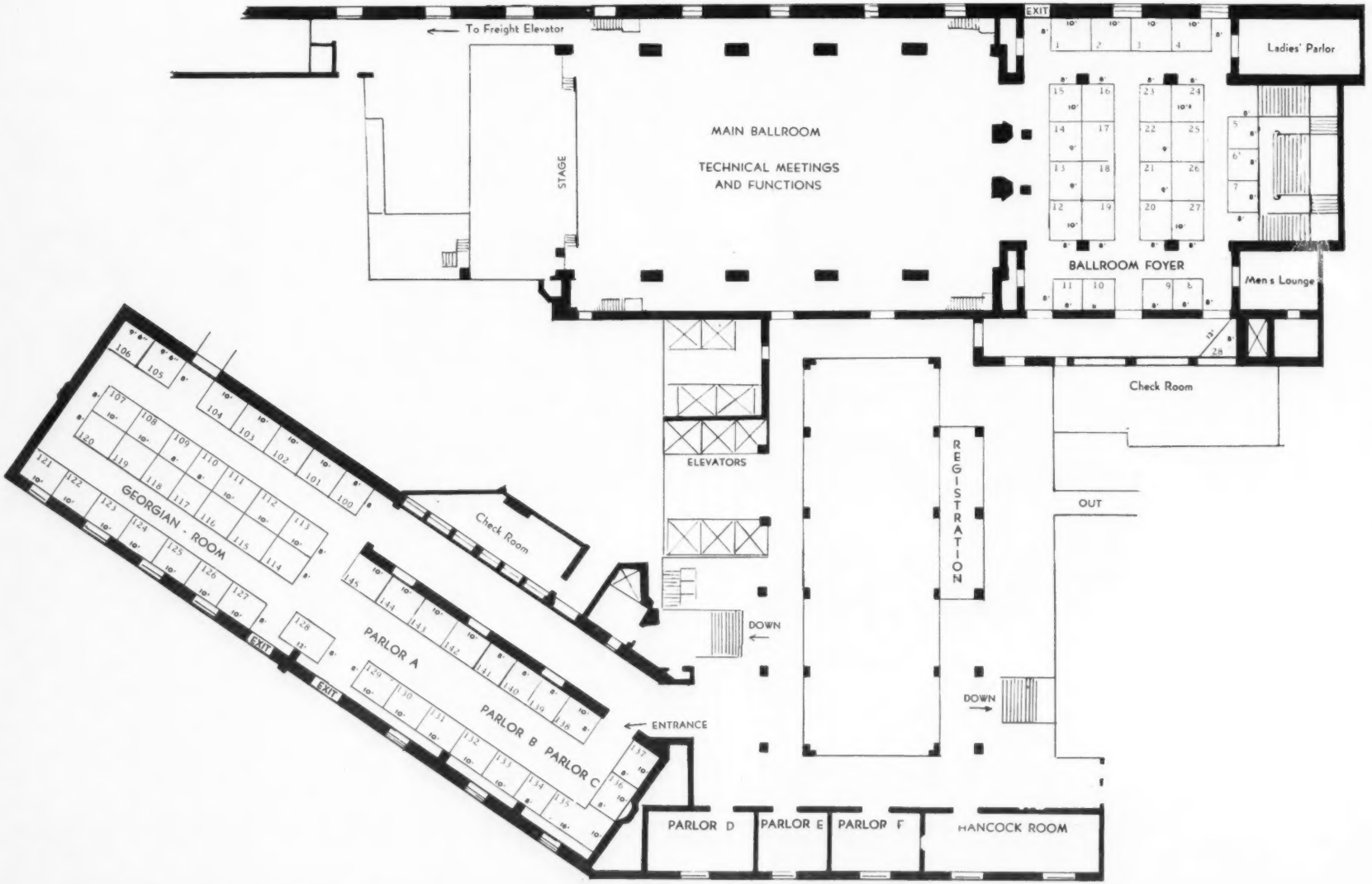
FABRIC RESEARCH LABORATORIES, INC., DEDHAM, MASS.—(128)

EXHIBIT: 24-inch Narrow Fabric Compactor and Environmental Test Chamber which fits all standard Instron tensile testing instruments.
IN ATTENDANCE: Dr. Kenneth R. Fox, Francis F. Burr, Leonard S. Backer, Arthur M. Glass and Thomas T. Constantine.

Floor Diagram

1957 AATCC Textile Dyeing & Finishing Exhibit

HOTEL STATLER Boston, Massachusetts November 14-15-16, 1957



FAIRCHILD PUBLICATIONS, NEW YORK, N. Y.—(19)

EXHIBIT: Their publication "Daily News Record".
IN ATTENDANCE: Miss Bertha Kaufman.

THE FOXBORO COMPANY, FOXBORO, MASS.—(112)

EXHIBIT: Some of the latest developments in dyeing and finishing plant instrumentation, including their magnetic Flow Meter, their new Cell Transmitter for measuring liquid level, a pneumatic Speed Transmitter for measuring machine speeds, an indicating Temperature Transmitter, a pH Electrode, Redox Electrode Assembly, Conductivity Cell, and their CycleLog Temperature Controller.
IN ATTENDANCE: W. H. Ridley, H. H. Michelmore, J. W. Gordon, J. E. Allen, Jr., S. C. Alexander and R. M. Green.

GASTON COUNTY DYEING MACHINE CO., STANLEY, N. C.—(138)

EXHIBIT: Sample Dyeing Machines for packages, raw stock, top, tow, cakes, muffs, Barber-Colman cheeses, woven and tricot fabrics; also scale models of production units.
IN ATTENDANCE: Gordon Hacker, Walter Newcomb and Alber March.

THE GOODYEAR TIRE & RUBBER CO., AKRON, OHIO—(14-15)

EXHIBIT: Textile applications of Chemigum, Pliovic, and Pliolite (both resin and rubber type) lattices in carpet backing, nonwoven fabrics, printing inks, and textile finishes.
IN ATTENDANCE: C. O. McNeer, J. E. Warner, J. Platner, E. W. Scott, J. W. Bear, F. A. Mather, D. E. Neese, W. F. Gerrow, J. S. Brice, A. R. Merritt, J. M. Hussey, J. R. Houlette and R. J. Mayfield.

THE HILTON-DAVIS CHEMICAL CO. DIV., CINCINNATI, OHIO—(12-13)

EXHIBIT: Theme will tie in with the International Geo-Physical Year, featuring "Colors of the Present and Colors of the Future". Model of earth satellite. Panel on Hiltazene Fast Color Base Solutions.
IN ATTENDANCE: Nelson S. Knaggs, S. Y. Stribling III, William A. Green, Edward A. Britton, Willard L. Sharp, George N. Nickles, W. H. Howard and Arthur S. Davis.

HOWES PUBLISHING CO., NEW YORK, N. Y.—(131)

EXHIBIT: Publications, incl. "American Dyestuff Reporter".
IN ATTENDANCE: James A. Boyle.

INSTRON ENGINEERING CORP., QUINCY, MASS.—(113)

EXHIBIT: Their new table model Tensile Testing Instrument, also a complete line of accessory equipment including the Instron Integrator.
IN ATTENDANCE: Harold Hindman, George S. Burr, L. F. Cedrone and L. F. Sheats.

INSTRUMENT DEVELOPMENT LABORATORIES, INC., ATTLEBORO, MASS.—(110)

EXHIBIT: Color-Eye with abridged spectrophotometer and fabric holders; expanded Color-Eye for viewing large panels and wall surfaces; Color Tolerance Computer.
IN ATTENDANCE: Donald R. Hall, Forrest Johnson and Fred H. Gerring.

INTERNATIONAL SALT CO., SCRANTON, PA.—(104)

EXHIBIT: Booth depicting the Lixate Process and plastic model of Lixator.
IN ATTENDANCE: O. W. McKeown, W. W. Harris, Jr., N. M. Agnew and A. J. Hulsebosch.

MACBETH DAYLIGHTING CORP., NEWBURGH, N. Y.—(1)

EXHIBIT: The latest developments in Color Matching equipment, also their newest Instruments, including their new Densitometer for use in the fields of black and white and color.
IN ATTENDANCE: Robert Meeker and Mr. McCurdy.

McGRAW-HILL PUBLISHING CO., INC., NEW YORK, N. Y.—(20)

EXHIBIT: Publications, including "Textile World".
IN ATTENDANCE: Howard J. Bernard.

MORTON MACHINE WORKS, INC., COLUMBUS, GA.—(134)

EXHIBIT: Package, Raw Stock, Top and Beam Dyeing equipment; elevated temperature dyeing equipment for natural and man-made fibers.
IN ATTENDANCE: Harry C. Jackson, James F. Notman and J. R. Angel.

MORTON SALT CO., CHICAGO, ILL. (145)

EXHIBIT: Various grades of salt used in the textile industry.
IN ATTENDANCE: R. A. Munson.

NOPCO CHEMICAL CO., HARRISON, N. J.—(122)

EXHIBIT: Samples and technical data on their complete line of textile processing chemicals, including detergents, conning oils, lubricants, wetting and finishing agents and dye assistants.
IN ATTENDANCE: W. Brewer, L. Rossiter, G. Zust, R. Schubert, J. Twarog, R. Jones, T. Fahey, A. Waldron, W. Dolan and J. Gammon.

NUODEX PRODUCTS CO., DIV. HAYDEN CHEMICAL CORP., ELIZABETH, N. J.—(24)

EXHIBIT: New developments in mildew resistance treatment for textiles as well as a wide variety of textile fungicides already in use.
IN ATTENDANCE: R. C. Brumberger, Dr. P. F. Kiens, W. J. Stewart.

OLIN MATHIESON CHEMICAL CORP., INDUSTRIAL CHEMICALS DIV., BALTIMORE, MD.—(119-120)

EXHIBIT: Chemicals for textile processing.
IN ATTENDANCE: J. F. Carey, J. G. Chalfant, W. H. Eastburn, W. W. Northgraves, D. Richardson, L. E. Russell, J. F. Synan, J. J. Tepas, O. J. Theobald and B. H. Wojcik.

ONYX OIL & CHEMICAL CO., INC., JERSEY CITY, N. J.—(114)

EXHIBIT: The booth will be devoted to the Astons, their durable anti-static agents.
IN ATTENDANCE: F. O. Robitschek, P. E. MacLean, M. Schlesinger, H. C. Wood, L. S. Goldberg, P. D. Jacobs, G. Thomas and A. E. Hardy.

ROHM & HAAS COMPANY, PHILADELPHIA, PA.—(27)

EXHIBIT: Samples of various fabrics treated with their textile chemicals.
IN ATTENDANCE: R. G. Thomas, H. F. Lawton, H. C. Borghetty, H. S. Travis, J. M. Schandler.

THE TANATEX CORP., KEARNY, N. J.—(130)

EXHIBIT: Dacron fabrics dyed with Carolid and Tanavol, also various other Tanatex products.
IN ATTENDANCE: Peter J. Scott, Dr. Sidney M. Weinstein, Bill Shive, Adolf Dabal.

TESTFABRICS, INC., NEW YORK, N. Y.—(140)

EXHIBIT: Full line of Testfabrics for use in laboratories; dyestuff and quality control; 5 and 10 gram skeins of all conventional yarns.
IN ATTENDANCE: Werner Klaas, Hyman Levitt, Mariane Blanck.

TEXTILE AGE

(See Cleworth Publishing Co.)

TEXTILE INDUSTRIES, ATLANTA, GA.—(127)

EXHIBIT: Publications, including "Textile Industries".
IN ATTENDANCE: John C. Cook.

TEXTILE WORLD

(See McGraw-Hill Publishing Co.)

TURBO MACHINE CO.-SMITH, DRUM DIV., LANSDALE, PA.—(16)

EXHIBIT: Information available on Smith, Drum Package Yarn Dyeing, Extracting and Drying Machines; Skein Dyeing Machines for natural and synthetic fibers and hosiery and sweater Dyeing and Drying machines, together with finished products.
IN ATTENDANCE: W. Kirk Wyatt, Albert Bagian and William A. Fuchswanz.

UNION CARBIDE CHEMICALS CORP., NEW YORK, N. Y.—(132-133)

EXHIBIT: Wide selection of chemicals to make "tailored" softeners and detergents and complete line of samples of their chemical products.
IN ATTENDANCE: D. C. Stewart and technical representatives from their Boston, Mass. and Newark, N. J. district offices. Technical specialists from New York.

THE UNITED STATES TESTING CO., INC., HOBOKEN, N. J.—(125-126)

EXHIBIT: Newly developed Knit Shrinkage Tester, Pilling Tester, Gas Fading Chamber, Detergency Tester, and other testing instruments; also information on their testing and research services for the wet processing industry.
IN ATTENDANCE: F. P. Brennan, R. T. McAndrew, A. J. Kellner, W. H. Jones, A. C. Farnham.

WARWICK CHEMICAL DIV., SUN CHEMICAL CORP., LONG ISLAND CITY, N. Y.—(129)

EXHIBIT: Their products Norane and Impregnole, also textile resins and Suntone Pigment Printing Colors for textiles.
IN ATTENDANCE: H. C. Whittemore, H. B. Goldstein, A. J. Picciotti, R. F. Pollard, T. F. Parsons, J. R. Gimeli, Steve Nye, R. G. Perriello, E. T. McIlwain.

EDWIN L. WIEGAND CO., PITTSBURGH, PA.—(7)

EXHIBIT: Their Chromalox electric far infrared radiant heating equipment for booster heating, drying, heat setting, singeing, and prevention of migration.
IN ATTENDANCE: W. L. Thomson and Leo C. Pelkus.

Europe

(Continued from Page 56)

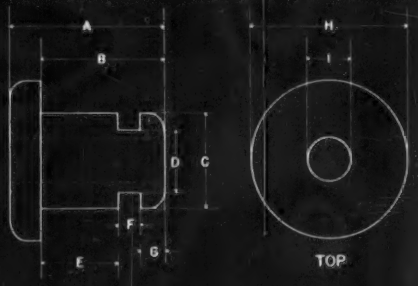
Sweden Buys in East Bloc—Wilhelm Paues, director of Textilraadet, has reported that Sweden imported over $6 million worth of East European textiles last year, the highest of any European country. Sweden also buys considerable West European textiles. Knitwear and ready-made clothing are major items imported from both blocs.

Rumanian Man-Made Fibers—The Frankfurt firm of consultant engineers, Hans J. Zimmer, received a $5.6 million order from the Rumanian Government for equipment and technical advice for that nation's first fully synthetic fiber factory. Situated north of Jassey, the plant, now under construction, will turn out 2,000 tons of Relon, Nylon-6, half staple and half filament, and 12,000 tons of ammonium sulphates. Entire plant will cost $11.2 million and should start production in about a year.

MACHINERY and EQUIPMENT SECTION

MITCHELL-BISSELL *Quality* GUIDES

PORCELAIN
GROOVED
ROVERS



Available in either our Standard White Glaze or with our Blue Satin Finish.* Wire clips to fit all patterns can be furnished. We also make more than sixty different sizes of plain (ungrooved) Rovers.

MITCHELL-BISSELL CO. PATTERN NO.	A	B	C	D	E	F	G	H	I
No. 2292	3/16"	9/64"	11/64"	9/64"	1/16"	1/32"	3/64"	15/64"	1/16"
No. 1596	13/64"	5/32"	17/64"	3/16"	3/64"	3/64"	1/16"	11/32"	7/64"
No. 2454	15/64"	3/16"	.300"	1/4"	5/64"	3/64"	1/16"	3/8"	1/8"
No. 2351	1/4"	3/16"	3/8"	21/64"	3/64"	3/64"	3/32"	33/64"	15/64"
No. 2508	5/16"	15/64"	.175"	5/32"	9/64"	1/32"	1/16"	1/4"	5/64"
No. 2364	5/16"	15/64"	19/64"	15/64"	1/8"	3/64"	1/16"	3/8"	9/64"
No. 1761	5/16"	1/4"	5/16"	1/4"	9/64"	3/64"	1/16"	25/64"	1/8"
No. 2251	11/32"	1/4"	9/32"	7/32"	5/32"	1/32"	1/16"	19/32"	9/64"
No. 2549	23/64"	1/4"	21/64"	9/32"	1/8"	1/16"	1/16"	7/16"	3/16"
No. 2502	3/8"	9/32"	15/32"	25/64"	143"	1/16"	5/64"	21/32"	7/32"
No. 2181	25/64"	19/64"	17/64"	7/32"	11/64"	1/32"	3/32"	11/32"	1/8"
No. 2654	13/32"	9/32"	.325"	1/4"	5/32"	3/64"	5/64"	27/64"	1/16"
No. 2597	27/64"	23/64"	.303"	1/4"	.245"	3/64"	1/16"	3/8"	1/8"
No. 2503	37/64"	21/64"	.240"	3/16"	.070"	3/64"	.212"	7/16"	.085"

MITCHELL-BISSELL CO. • TRENTON, NEW JERSEY

Southern Representative: R. E. L. Holt, Jr. & Associates, Drawer 1319, Greensboro, N. C.

MITCHELL-BISSELL CO.

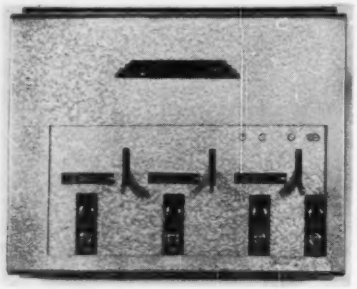
*REG. U.S. PAT. OFF.

New MACHINERY

New EQUIPMENT

Calender Measuring Unit

A calender measuring unit able to measure simultaneously various widths of cloth, each of different length, is offered by Trumeter Co., in conjunction with the English manufacturer. The unit was developed originally for the jute industry to measure cloth on calenders. The machines are supplied in two or more units, dependent on the maximum number of pieces which can be passed side by side through the calender.

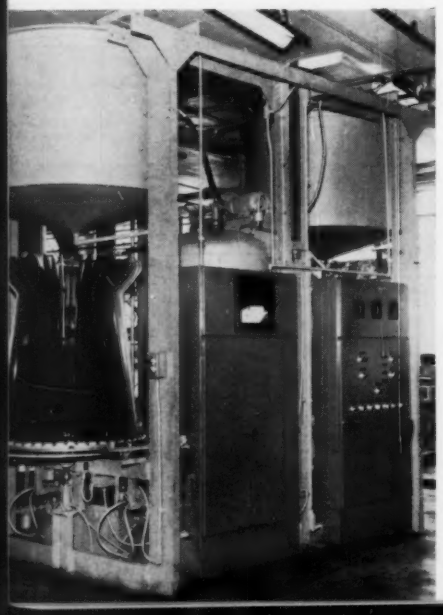


A series of movable contacts is placed over the top bowl of the calender, each controlling a separate width of cloth. The top bowl, which serves as a measuring roller, is coupled mechanically to the unit. As the cloth passes over it, each contact engages with its corresponding counter. Immediately the cloth leaves the top bowl, the counter stops automatically thus giving the correct yardage on each piece. *For further information write the editors.*

Turbo to Make Brewin Machine

Turbo Machine Co., Lansdale, Pa., has announced the signing of an agreement with E. H. Brewin and G. H. Brewin covering the manufacture, sales and service of an all-purpose hosiery machine in which preboarding, scouring, dyeing, finishing and final boarding are accomplished simultaneously.

Turbo will call the machine the Brewin Machine after the inventors. Turbo formerly built the machine for Dyotherm Corp. Turbo is taking over the servicing of Brewin machines already in operation and promises full cooperation with users of the equipment. *For further information write the editors.*



Brewin All-Purpose Hosiery Machine

Spinning Room Cleaners

Parks-Cramer Co. has issued a bulletin describing in detail its traveling cleaners for spinning rooms. The company also has published a bulletin on its SpinSaVac and the SpinSaCreel. SpinSaVac replaces the scavenger roll on the spinning frame with a vacuum clearing conduit. SpinSaCreel is an open type creel designed to facilitate creeling and decrease operating costs of textile spinning processes. *For further information write the editors.*

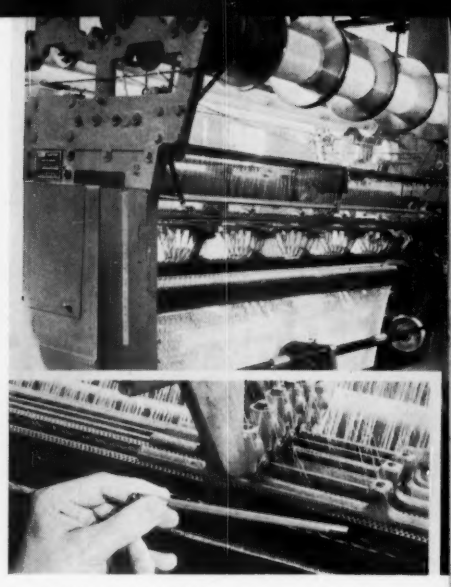
Better Rub Apron

The Boston Woven Hose & Rubber Co. division of American Biltrite Rubber Co., Boston, Mass., is now offering rub aprons to handle blends of wool and synthetic fibers, such as Dacron, Orlon, nylon and others, where greater rub is required. The company asserts its aprons have a greatly increased "coefficient of rub" which permits card settings to be more open and aprons to run cooler. Increased flexibility eliminates ballooning and tight center-to-center settings which insures better tracking and less wear. *For further information write the editors.*

Nylon Coated Guide Bars

The adoption of nylon-coated guide bar pins on a Raschel knitting machine increased pin life by 50% and markedly reduced waste costs at the Narrow Fabric Co., Reading, Pa. The pins were coated by the Whirclad coating process of Polymer Processes, Inc.

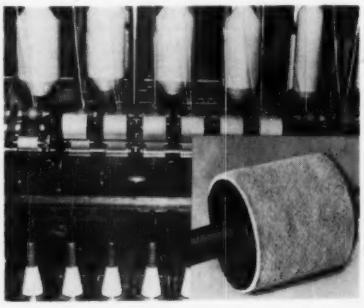
Narrow Fabric reported that the nylon coated pins have been running for 15 months without noticeable wear with fabric waste from oil drip completely eliminated. Previously, solid steel pins were oiled daily to prevent wear with oil drip stains costing as much as $50 a month. Normal life of steel pins with full lubrication was three months. *For further information write the editors.*



Raschel Knitting Machine with nylon-coated guide bar pins.

Textile Dryers, Ovens

The Lanly Co. has issued a catalog covering its line of ovens and dryers for the textile industry. The catalog is illustrated and gives detailed information on an adjustable air nozzle system, coated fabric dryers and fusing ovens, tenter dryers, curing ovens, roller predryers, and look dryers. *For further information write the editors.*



Top Clearer Cover

A new kind of revolving top clearer cover said to make possible substantially longer picking schedules with a resultant saving in labor has been developed by the Industrial Division of Armstrong Cork Co. The new cover material, called Accotex NK-770, is an expanded synthetic rubber material reported to be much more durable than sponge rubbers tried in the past. NK-770 is said to collect waste more efficiently and uniformly. *For further information write the editors.*

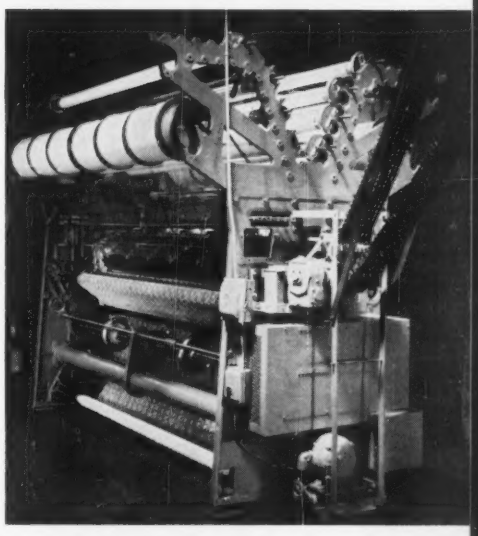
You can see why the NEW KIDDE KNITTER is revolutionizing the lace industry

Look at that lace. It's elaborate, intricate and fine—*much* closer to imported lace than any other made on knitting machines. Ten guide bars on the Kidde Raschel Knitter have made these incredibly beautiful designs possible—and have revolutionized the whole lace industry. The ten guide bars even give you liners to outline the gimp. And consider the speed! — up to 300 courses per minute. It will run with anything from 2 to 10 guide bars and it'll make virtually anything you want from tulle to elastic fabrics. No wonder it's already the most widely used Raschel type machine in the world.

If you specialize in any one of the following fabrics: elastic fabrics, tulle, and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or underwear fabric, or if you need versatility encompassing many of these types, the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details to Department KLG1.



The new Kidde 10-bar Raschel Knitter

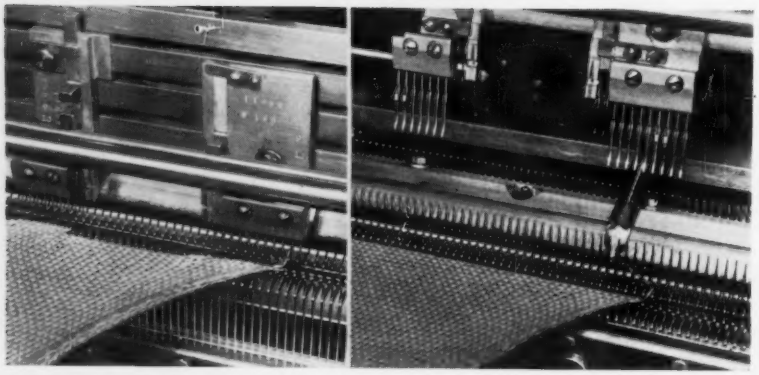
TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — JOHNSTON BUILDING, 212 SOUTH TRYON ST., CHARLOTTE, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.



9-Gauge Reading Full-Fashioned Outerwear Machine (left) narrowing and (right) plain knitting.

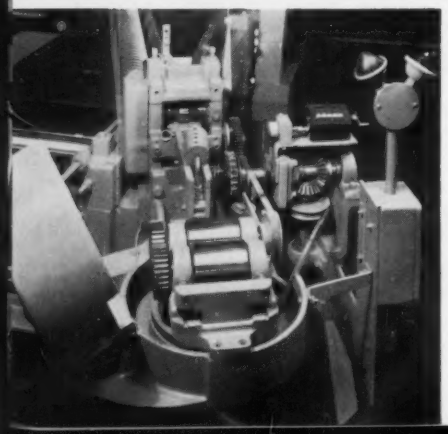
TMW Bulky Knitters

Textile Machine Works has announced that delivery of coarser gauge machines is scheduled to some of the leading outerwear manufacturers during the latter part of this year to meet the growing demand for bulky-knit full fashioned garments. Delivery of machines until now had been withheld because of experimentation necessary to acquire stitch perfection and to provide the maximum range in coursing. The knitting elements of the machine were designed specifically to insure satisfactory operation with all types of yarns, according to textile machine works. Operation difficulties common to coarse gauge, it is reported, particularly maintenance, have been greatly reduced. *For further information write the editors.*

Pacific Converter Coiler

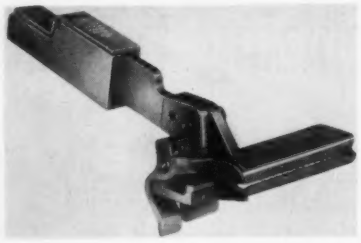
A new space-saving coiler mechanism for the Pacific Converter, featuring sealed bearing lubrication, has been announced by Warner & Swasey. Requiring about three feet less floor area than previous models, the new coiler utilizes permanently lubricated bearings at all major wear points. The coiler rotor is belt-driven while the combination of sealed bearings and belt drive rotor minimizes the danger of stock contamination. *For further information write the editors.*

New Pacific Converter Coiler Mechanism



3-Roll Lab Padder

Birch Brothers has introduced a new three roll laboratory padder, in addition to its two roll padder. The three roll machine is equipped with three 4-inch diameter by 18-inch face ball bearing pressure rolls which are optionally available in rubber, neoprene, hycar, or stainless steel construction. The pressure obtainable on the small rolls allows the unit to duplicate the results of full-size production machines. *For further information write the editors.*



New Draper Temple

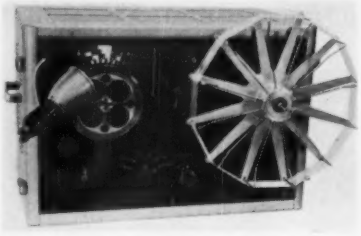
The new Draper No. 524 Temple, currently available for X and X-2 model looms, features a scissors-type thread cutter mounted on a torsional rubber bearing. The thread cutter requires no lubrication and can be adjusted to cut filling ends short after transfer. The new No. 524 eliminates thread cutter spring, the conventional thread cutter, and top end. *For further information write the editors.*

Better Dacron Adhesive

Availability of a new industrial adhesive, Chemlok 401, has been announced by Lord Manufacturing Co. Chemlok 401 is said to bond Dacron and nylon to uncured natural rubber, GR-S, neoprene, butyl and Buna N elastomers. The company asserts it is the first adhesive for Dacron which produces high-strength adhesion. *For further information write the editors.*

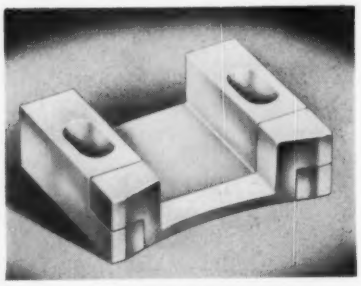
Improved Scotch Tape

An improved version of a pressure sensitive tape designed especially for use in textile mills has been announced by Minnesota Mining and Manufacturing Co. Identified as "Scotch" brand textile tape No. 254, it is designed for such general textile applications as tabbing the last lap of fabric rolls, holding warp threads in parallel position while the beam is transferred to the weaving loom and to secure paper wrappings around bolts or rolls of cloth. *For further information write the editors.*



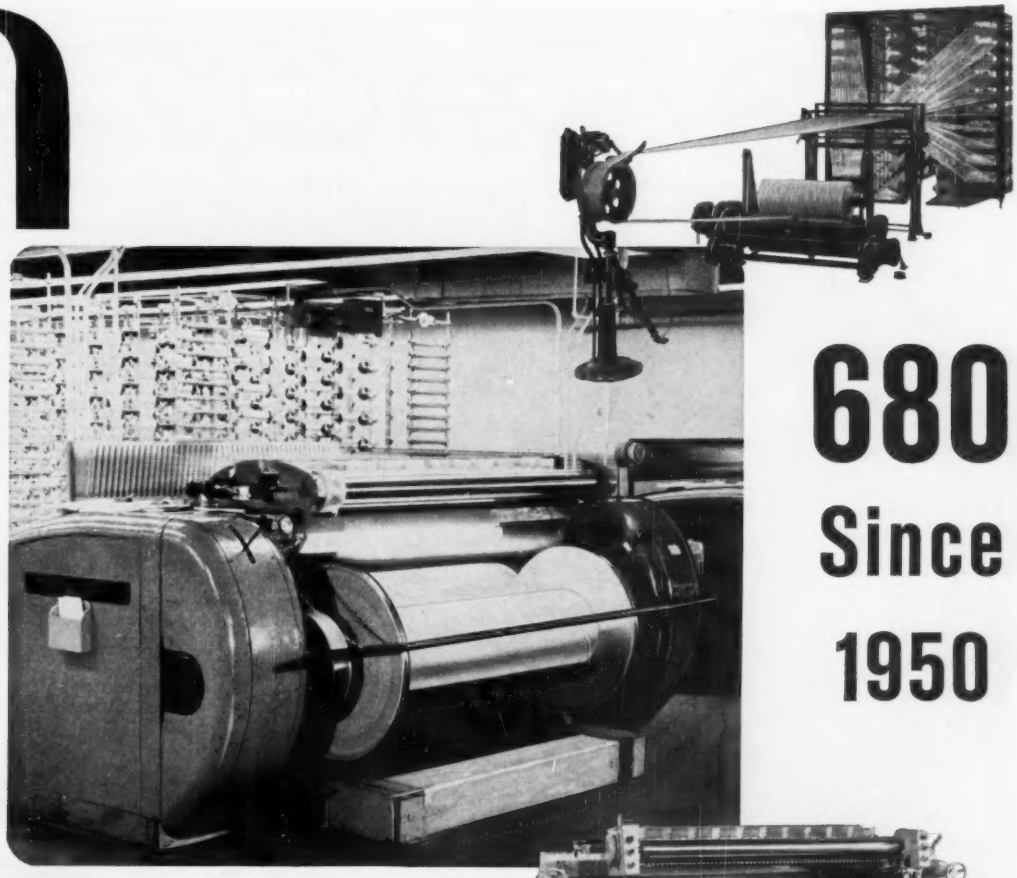
Faster Yarn Testing

Uster Corp. has announced a new high-speed rewinder said to make possible yarn tests at speeds up to 1,000 yards per minute. The rewinder, which will soon be available, not only reduces testing time on the Uster Evenness Tester but increases the spectrum analyzed on the Uster spectrograph from 10 yards to 100 yards. The rewinder is designed as an independent unit to be placed underneath the evenness tester. *For further information write the editors.*



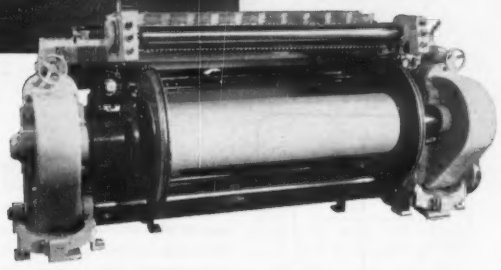
Improved Throat Plates

Marvel Specialty Co. has introduced an improved throat plate for circular knitting machines. The design utilizes molded nylon for the base and, for the insert, an extremely hard ceramic made by American Lava Corp. The resulting throat plate is said to be strong, light weight and easy to mount. The ceramic insert prevents damaging of the yarn while the molded nylon base absorbs impact and vibration. The throat plates are available for 400 and 474 needle circular knitting machines. *For further information, write the editors.*



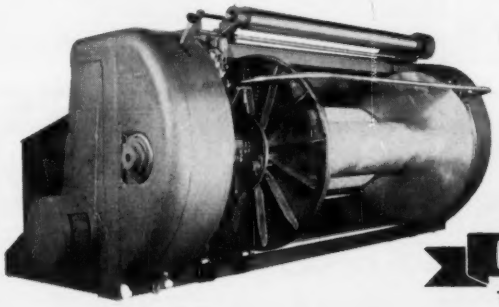
Cocker

680 Since 1950



. . . has installed over 680 warpers since 1950—approximately three times the volume of the next leading make. Speed, flexibility, economy, and many valuable exclusive features account for this outstanding popularity—from finest deniers to heaviest tire cord yarns.

Accurately maintained air operated pressure produces beams of any desired density, from hardest beams for extra hours of weaving to soft beams for perfect dye penetration. Speed and braking are rheostat controlled from both ends to provide smooth operation and instant stops at all speeds. Horizontal traverse on combs prevent channeling. Other features, such as air doffing, predetermining counter clocks, and electric speed indicators are standard on most models. Heavy construction practically eliminates vibration.



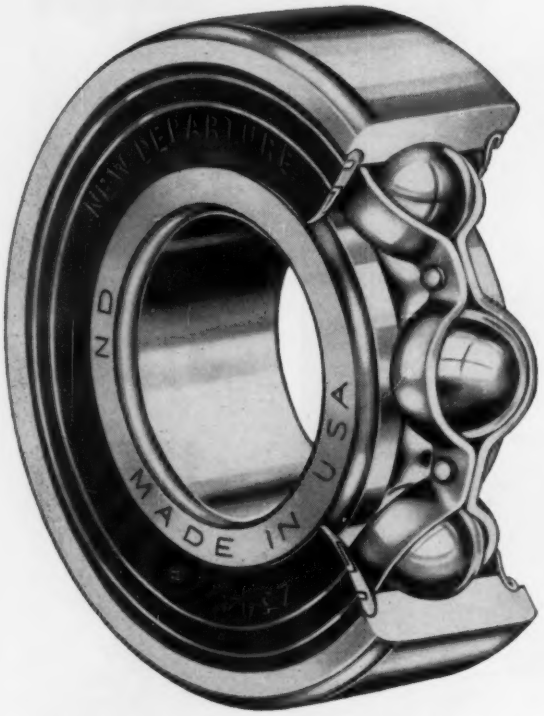
Whatever your warping requirements may be, there is a Cocker Machine which will do the job faster and better. Let us give you full information on the type you need.

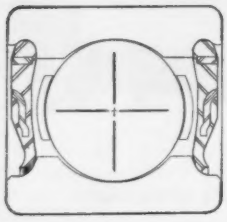
THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

ND FACTS





The diagram shows in section the New Departure Sentri-Seal. Lip-contacting surfaces are ferm-ground simultaneously with the ball race, giving an extremely high degree of concentricity between sealing surfaces and the raceway.

on guard against dirt and wear!

The unique design of the Sentri-Seal gives optimum protection against dirt, and includes a number of other major advantages.

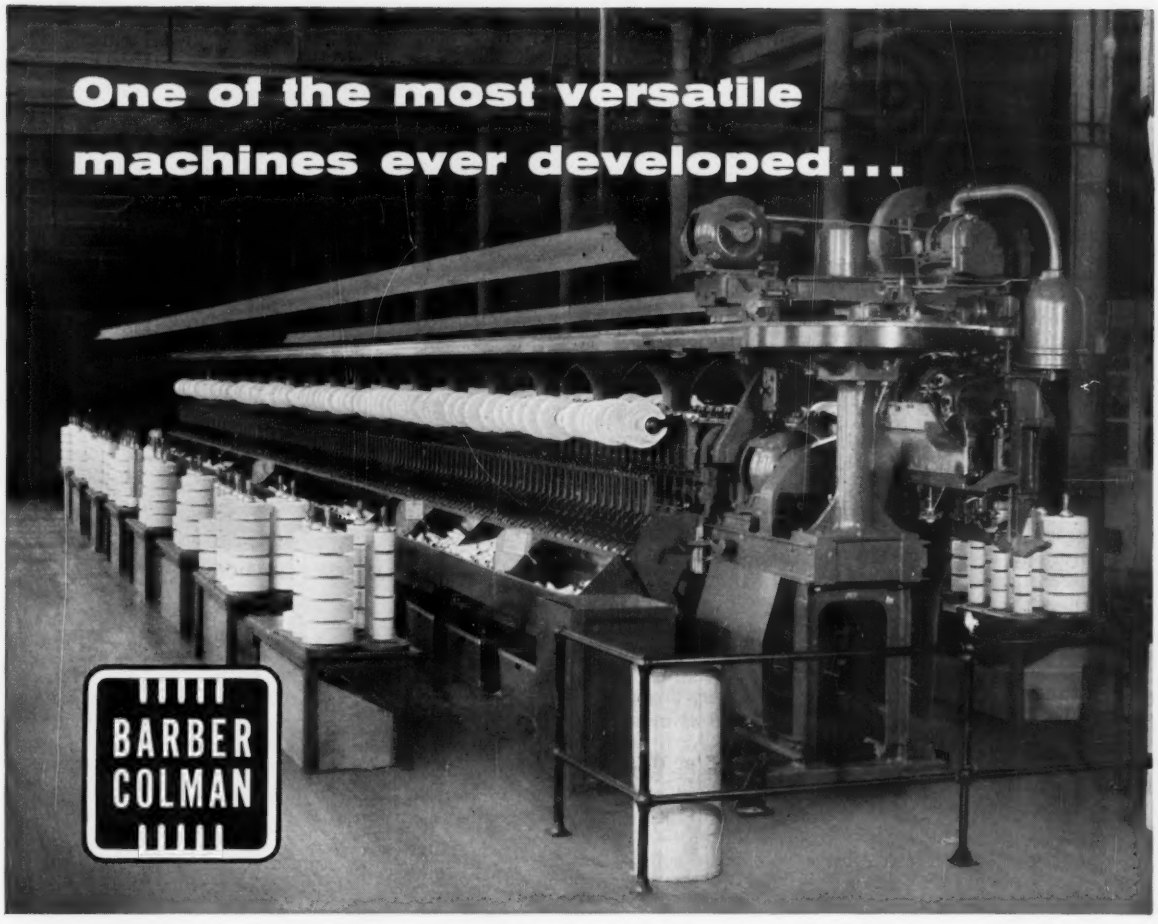
Sentri-Seals can be removed, easily replaced. As the seal is of synthetic rubber in which two metal rings are embedded, a constant-rate spring is created between the rings. Inherent flexibility prevents distortion of the bearing outer ring due to seal insertion, permitting the use of bearings to the higher accuracy specifications. The spring action maintains an efficient sealing contact with the bearing ring to bar dirt and retain lubricant. Sentri-Seals are relatively inert to oils and greases and operate satisfactorily through a temperature range of −40°F. to 225°F. Specifications available for still higher temperatures. In applications where relubrication is desired, it is easily accomplished by the injection method.

Write for full details on Sentri-Seal

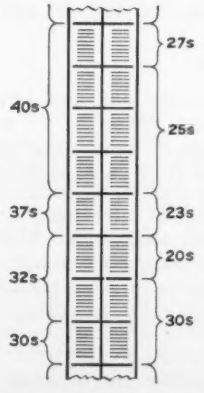
Sentri-Seal is available for a range of sizes in single-row, standard-width bearings and also in two types of New Departure adapter bearings. Sizes, dimensions and capacities are listed in the latest New Departure catalog.

GM
FORWARD FROM FIFTY

NEW DEPARTURE
DIVISION OF GENERAL MOTORS, BRISTOL, CONN.
NOTHING ROLLS LIKE A BALL



MULTIPLE-COUNT SPOOLER



Sale yarn mills and producers of piece goods that use various counts of different mixtures will find that this machine can be a very profitable investment. It is the famous and familiar Barber-Colman Automatic Spooler, but now you can wind . . .

A DIFFERENT COUNT EVERY 9 UNITS

The machine is built in "bays" between posts that support the traveler track, with nine bobbin-to-cheese winding units in each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be loaded and run with a different yarn. Starter boxes and cheese tables are set up individually for each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns. (Note the dividers between the bobbin trays on the machine shown above.) *Full details on the many adaptations of this versatile machine can be obtained from your Barber-Colman representative.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. — GREENVILLE, S. C., U.S.A. — MANCHESTER, ENGLAND — MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Quimanil S.A. Anilinas e Representacoes Rua Glicerio 537/547 Caixa 5658 e 3431 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha No. 7 Awajimchi 1-Chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

Five Hoffners

(Continued from Page 34)

Thus by gradual stages, Hoffner Rayon pressed forward from being a mere commission dyer to become a processor and distributor of dyed and packaged yarns. In 1935, the company began to make novelty yarns such as slubbed and boucle yarns for the knitting trade. All these new ventures, required new twisting and winding machinery and as well as harder work and the acquisition of new skills by Joseph Hoffner and his sons. But the Hoffners were tireless workers, and they did not spare themselves in their efforts to learn these new things and keep their business growing.

A New Plant Acquired

Their efforts were successful, too. By 1941, the year World War II started for the United States, they had brought their yearly sales past the half-million mark. The year before they had purchased a bigger plant on Belgrade and Ontario Streets in North Philadelphia. In 1945, they acquired the Quakertown plant with 30 thousand feet of additional floor space to house their throwing operation.

Today with its annual volume in the million dollar bracket and their employees numbering about 125, Hoffner Rayon is a substantial business keeping all five of the Hoffner sons busy. Their father, Joseph Hoffner, Sr., died in 1948. He was succeeded as president by the eldest son, Joseph C. Hoffner. As president, Joe Hoffner has overall supervision of the business. The next oldest brother, John, has charge of the dyeing operation at the North Philadelphia dye house and he also finds time to work with Charles, next youngest of the brothers in customer service and sales.

James Hoffner, the third brother in age, supervises the humming throwing plant in Quakertown (right now its running on three shifts, seven days a week.) Larry, the youngest Hoffner brother, does selling and customer service work in the New Jersey-Pennsylvania area where so many of Hoffner's customers are located.

CHARLES P. HOFFNER

LAWRENCE H. HOFFNER

Adds Newer Fibers to Line

In recent years, the company has kept up with the times by branching out from rayon into the newer fibers. Currently it processes and sells nylon and Dacron filament yarns as well as rayon. Sales of dyed and packaged yarn to weavers of auto upholstery fabrics, to knitters, and to braiders of insulation materials are an important part of the Hoffner business.

The company also supplies yarn to a wide variety of other customers including producers of necktie, bathing suit, and surgical garment fabrics; it supplies weavers of ribbons, and hat bands, manufacturers of tapes for parachutes, producers of sewing threads. Among its active customers today are firms, such as Art Neckwear Co., that were among the first to give Hoffner business when he started 25 years ago.

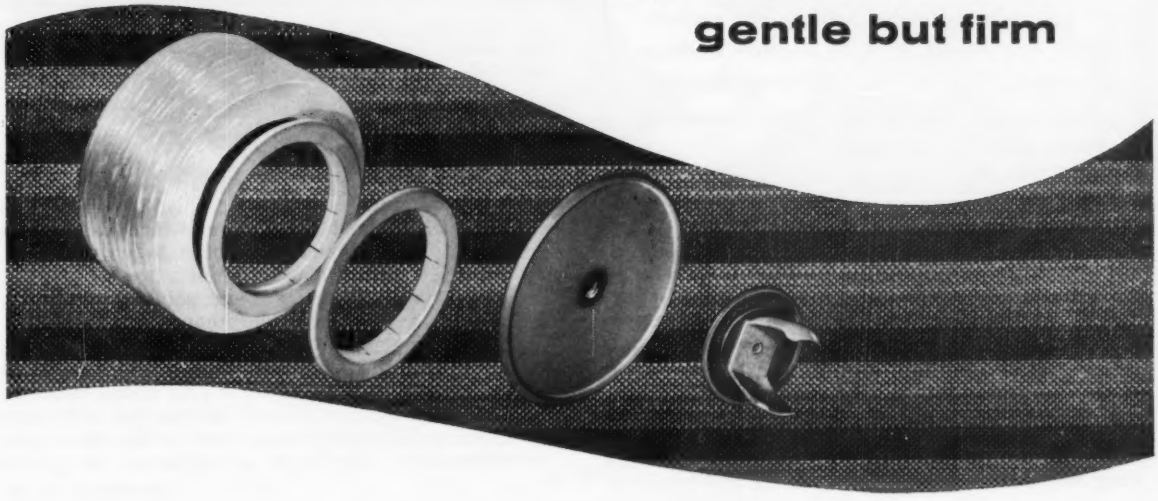
A Robust Family Business

In spite of its considerable size and impressive roster of employees, Hoffner Rayon is still a family business in that all five sons of Joseph Hoffner work in it and make their living from it. Friendly, unpretentious and hard working, the five Hoffner sons give to their business a good deal of the solidity and simple directness of their own characters. Theirs is a "no nonsense" business, a business without complicated trimmings or pretenses, a business based on hard work and giving good value to customers. For these reasons it is a business which gives the overwhelming impression of lasting solidity, the impression that it will be prospering and earning a good plain living for its principals for many years to come.

Irene Blunt Retires

Miss Irene Blunt, executive director of the National Federation of Textiles, retires this month after 40 years with the federation. She plans to spend most of her time in the future at a new home she has built at Fort Lauderdale, Fla.

Synthane has a way with textiles... gentle but firm



The fine yarns in today's fabrics require the gentlest of handling. Therefore you find smooth, non-snagging Synthane laminated plastics in bobbins and pirns, in redraw caps, in furnisher rolls, in balloon separator blades, in hosiery turning and examining forms . . . and in many other textile machine parts.

Synthane is light-weight and strong. Synthane is smooth and wear-resistant. It shrugs off abuse; it resists impact, abrasion, crushing, steaming and effects of most commercial sizes and solvents. You may buy Synthane in sheet, rod and tube form or we can machine or fabricate complete parts to your specifications. Write us today for descriptive literature on Synthane laminated plastics. The unusual combination of properties of Synthane will show you why it is such an important product for textile mills and textile machinery manufacturers.

SYNTHANE ... industry's unseen essential

SYNTHANE CORPORATION S OAKS, PENNSYLVANIA

SYNTHANE CORPORATION
45 River Road, Oaks, Pa.

New fiber shapes

SPUTNIK'S appearance has stirred interest in scientific advances behind iron curtain. Here is a report on East German work to create new and varied fiber cross sections. Results may lead to new and interesting fabric textures and styling.

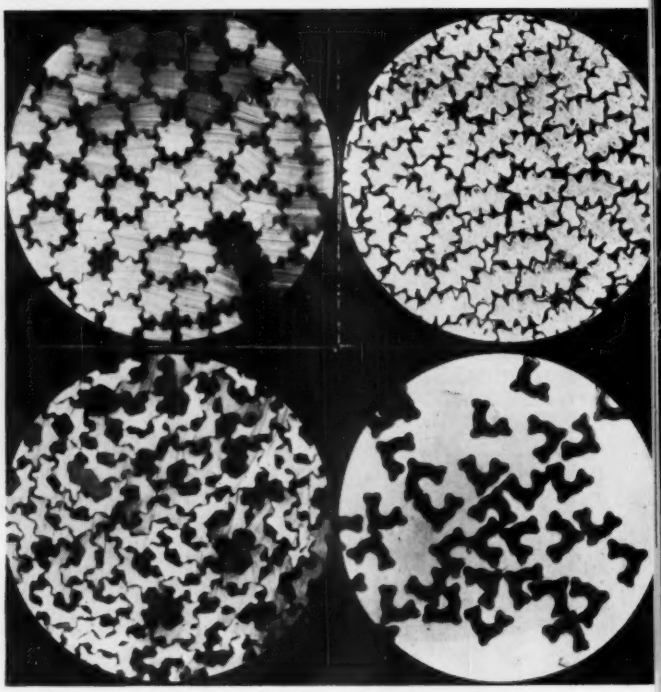


FIGURE 1—Microphotos of novel fiber cross sections. Upper left, star profile; upper right, concertina profile; lower left, dog-shaped profile; lower right, horseshoe profile

An MTM Exclusive

RESEARCH WORKERS behind the Iron Curtain at the Institut for Textiltechnologie der Chemiefasern, Rudolstadt, in Eastern Germany, have developed processes for modifying the characteristics of smooth structureless synthetic fibers to give them textile properties not before possessed by such fibers.

The scientists at Rudolstadt have developed methods of modifying cross-sections, outer-surfaces and inner structures of melt-spun polyamides and polyesters. They now claim to be able to combine and join their various methods to produce new yarn characteristics to overcome many of the drawbacks inherent in fibers of this kind.

They can produce so-called "profile fibers" by forcing the melt through a spinneret which has shaped concave holes. A patent has been taken out "DW Patent 11746, 26. January 1954) for a process for melt spinning synthetic linear high polymers, such as polyamides, polyesters, polyurethanes, etc. in a manner which provides variations in cross-sections. These cross-sections are retained during and after hot stretching processes designed to give added strength. To the casual glance, there is no obvious difference in appearance between these new profile fibers and conventionally spun fibers. Nevertheless the profile

(Continued on Page 86)

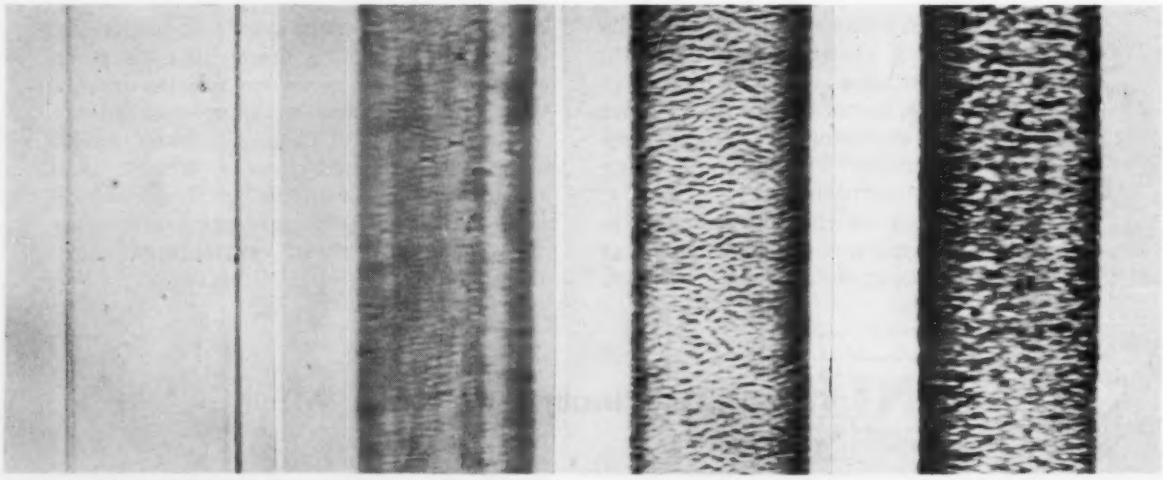
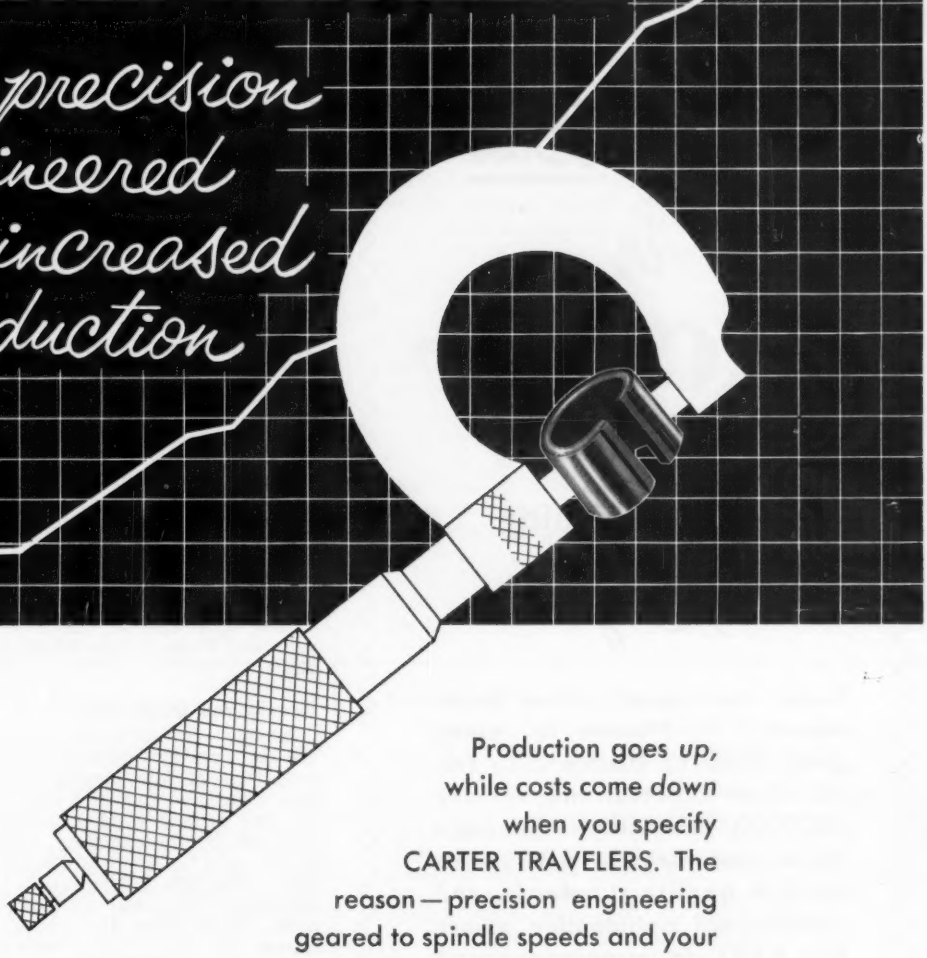


FIGURE 2—On the extreme left is a microphoto of an untreated smooth fiber; the three fibers on the right have been etched in varying degrees to give different surface effects

CARTER TRAVELERS

are precision engineered for increased production



Production goes *up*, while costs come *down* when you specify CARTER TRAVELERS. The reason—precision engineering geared to spindle speeds and your requirements, plus the dependable *QUALITY* of a laboratory controlled product and the *SERVICE* of an experienced organization.

Division of **A. B. CARTER, INC., GASTONIA, N.C.**
Manufacturers of The Boyce Weavers Knotter

Carter TRAVELER COMPANY

REPRESENTATIVES

R. A. Haynes, Special Representative..114 W. Fifth Ave., Gastonia, N. C.
W. L. Rankin.....501 S. Chester St., Gastonia, N. C.
D. E. Phillips.....2702 Garden Lakes Blvd., Rome, Georgia
P. L. Piercy.....128 Hudson St., Spartanburg, S. C.
J. R. Richie.....1307 Crabapple Lane, Raleigh, N. C.
J. K. Davis.....P. O. Box No. 129, Auburn, Ala.
C. E. Herrick.....139 Main St., E., Greenwich, R. I.
Oscar S. Lapham.....139 Main St., E., Greenwich, R. I.
Hugh Williams & Co....27 Wellington St., E., Toronto, Ontario, Canada

Kenyon®

For the Best in DACRON* FABRICS

specify finishing by Kenyon

Your customers have been educated by Dupont to expect great things of Dacron*. To fulfill their expectations, specify KENYON FINISHING. Kenyon's pioneering research, rigid adherence to quality standards, and yard-by-yard examination assure the BEST in appearance and performance.

*Registered trademark of Dupont's polyester fiber.

NEW YORK OFFICE
125 West 41st St.
Tel. OXford 5-2060, 5-2061

Dacron Fabrics in Current Production
NURSES' UNIFORM FABRICS
FLAG FABRICS
COLLAR INTERLININGS
INDUSTRIAL FABRICS
DACRON NINONS
DACRON DRAPERIES
DACRON BRASSIERE CLOTHS

THE Kenyon PIECE DYEWORKS INC.

"KENYON OF KENYON, RHODE ISLAND"

NEW FABRICS

NEW YARNS

New Vinyl Fabric

Bunting Co., Philadelphia, is now using a new vinyl fabric, manufactured by the Cotan Division of Interchemical Corp., in the production of steel and aluminum indoor and outdoor furniture. The fabric is said to be pliable, fade resistant and water-repellent. A main ingredient of the vinyl fabric is Pliovic AO, a copolymer dispersion resin produced by the Chemical Division of The Goodyear Tire & Rubber Co. Pliovic AO is utilized for a textile coating application by Cotan, which reports that the lower fusing quality and temperature exhibited by the resin is essential to the coating operation. Cotan, which does its own designing and printing, currently markets 1,000 active patterns, each with three to four colors. *For further information write the editors.*

Synthetic Fiber Filters

An increasing number of companies are taking advantage of the unique properties of synthetic fibers for use in filters, according to the Product Information Service of Du Pont. Anode bags of "Teflon" tetrafluoroethylene fiber are used by the Empire Smelting and Refining Co. in its electrolytic process of refining precious metals. According to Du Pont, when Empire used anode bags of fabric containing conventional fibers the bag life was measured in days, but bags made of "Teflon" and put in service two years ago are still giving satisfactory service. Filter blankets of Dacron polyester fiber also were reported to give far longer service than filter blankets of conventional fibers, at the Stickney, Ill., sewage disposal plant.

Interlocked Dynel Felt

A new type of mechanically interlocked felt for use as overlay material to improve performance properties of low pressure reinforced plastic laminate structures, has been developed by American Felt Co. One of several new synthetic fiber materials introduced by the company, the felt is made of 100% Dynel, acrylic fiber of Union Carbide and Carbon Corp. The felts are especially recommended for such laminated glass mat structures as boats, swimming pools, automobiles, ducts, hoods, pickling tank covers, linings, etc. Use of these felts eliminates the need for a gel coat, according to Union Carbide, and also provides a smooth uniform surface because of excellent resin-to-fiber bonds and lack of fiber migration to the surface.

New Lofted Yarn

A new 360 denier, acetate multi-filament lofted yarn has been announced by Eastman Chemical Products, Inc. The new yarn is intended to replace the conventional 350 denier type currently produced by the company. It utilizes a 2 denier per filament construction. Commercial poundages will be available this fall. Prices for the 360 denier yarn are: natural, 95 cents per pound; chromspun black, $1.08; and chromspun colors, $1.28. *For further information write the editors.*

New Stay-Up Sock Top

The Elder-Top, a men's sock which stays up yet requires no rubber, has been announced by W. Cliff and Delos M. Elder. The sock is made of synthetic stretch and other yarns and thereby eliminates the need for rubber. The sock can be made on automatic knitting machines adaptable at little cost from conventional knitting machines now on rubber yarn.

THE TEXTILE DISTRIBUTORS INSTITUTE, INC.

NEWS AND COMMENT

TDI Opposes Higher Anticipation Rates

Determined resistance to pressure from retailers for increased rates of anticipation is building up among garment manufacturers, mills and converters. As reported on this page last month some retailers have been attempting to obtain anticipation at a rate of 7 or 8%.

The Textile Distributors Institute recently issued a statement opposing the granting of anticipation in excess of 6%. In taking this stand, TDI has joined ten associations of garment and fabric manufacturers already on record in opposition to increased rates of anticipation.

The statement issued by TDI's Committee on Anticipation Rates said in part: Anticipation discount is a privilege accorded a customer by a seller. Your committee is aware that money is tight and lending rates have risen. However, when money was easy and lending rates low, customers were not asked to take small discounts.

A survey of the (TDI) membership indicates that no member is making any exception to the traditional discount rate. When checks have been received based on a higher rate, the customer has been advised that the request for higher anticipation rates cannot be granted. Below is a form letter which fabric distributors may wish to use as a correct guide. It is also suggested that payments be carefully checked as to correctness.

The Committee also pointed out that fabric sellers may find themselves in violation of the Robinson-Patman Act, if they do not extend a uniform rate to all accounts.

Here is the text of the letter recommended:

"Dear—: We have carefully considered all aspects of the current money situation and cannot permit our customers to anticipate their bills at a rate in excess of 6% per annum. We would appreciate your instructing your Accounts Payable Department to either anticipate at 6% or, if you prefer, to schedule our bills for payment at maturity without anticipation. Your cooperation will be appreciated so that we may both be spared the unnecessary expense of correspondence regarding excessive anticipation which our Accounts Receivable Department has been instructed to disallow."

Irving Roaman, Reliable Textile Co., Inc., is chairman of TDI's Committee on Anticipation Rates. Other members are Abbott J. Copeland, Cohn-Hall-Marx Co; George Greenspan, The Cantor-Greenspan Co., Inc., Nat Leavy, Goldstein & Leavy, Inc., Jackson E. Spears, Burlington Industries, Inc; and Walter Ross, president of TDI, ex officio, Rosewood Fabrics, Inc.

Wash-and-Wear Fall Jackets

Boys' lined, fall-weight jackets have been placed on the market by Cape Ann Manufacturing Co. The garment may be completely washed and dried in modern home laundry equipment and be ready for wear with little or no pressing. The jackets have a whipcord outershell of 65% Du Pont Dacron polyester fiber blended with rayon and a pile lining of Du Pont Orlon acrylic fiber. The hip-length garment retails from $32.50 to $37.50, depending on size, under the manufacturer's Mighty-Mac label. *For further information write the editors.*

Outlook

(Continued from Page 32)

"Ease of Care" Pleases Consumers—Minimum care performance, in many end uses, is attractive to consumers. Here, too, it can be argued that customer will want to own more products if they are easy to take care of than if they require constant attention. The extent to which minimum care theme can stimulate unit volume has not yet been explored.

Retailer Cooperation Is Better Now—Before the war, soft lines were usually more profitable than hard lines in general merchandise stores. During a large part of postwar period, however, appliances were easy to sell and profitable. There was a tendency to neglect soft lines. Now appliance and hard line supplies have more than caught up with demand. Attempts to create obsolescence by frequent model changes have backfired. As a result more stores are putting more thought and energy into their soft lines merchandising.

New Dynel Fur-Like Fabric

"Dynacurl," a new fur-like fabric designed to resemble Persian lamb, has been developed for the pile coating field by Multitex Products Corp. The fabric consists of a pile made with chenille yarn spun with 100% Dynel, Union Carbide's acrylic fiber, Schiffli embroidered to a woven cotton backing. The Dynel facing comprises 75% of the fabric, the cotton 25%. A fall collection of women's coats, using Dynacurl to retail under $100, will shortly be introduced. *For further information write the editors.*

Dacron-Nylon Quilted Fabric

"Wunderwear," a lightweight fabric using 100% Du Pont Dacron virgin fiberfill quilted into a woven nylon shell will show up in hunting outfits, shooting vests, hoods, and shooting mittens with fully-insulated trigger fingers. Made by Shelley Sportswear, Inc., Wunderwear will also be used in ski and skating suits, and winter walking clothes.

REPORT FROM JAPAN

Japanese restless under export quota restrictions; May soon seek to increase fabric sales to U. S.

By B. Mori

OSAKA—Entire issue of Japan's export trade with United States is coming under insistent questioning from this side. Japan's balance-of-payments difficulties of past six months have been topic of daily conversation among Japanese business men and have brought into sharp prominence trade-promoting mission of Japan's diplomatic agencies.

More optimistic among Japan's economic authorities predict that the country's foreign exchange accounts will be stabilized by year-end. Even if this proves true, it will diminish only slightly pressure for increased exports.

Japanese Feel Dependent on U. S.—Whether logical or not, Japanese people as a whole feel that there is special need to export to U. S., and that U. S. is under special obligation to buy more Japanese goods. It is outside the scope of this report to examine basis or justice of this feeling. Fact is that the feeling strongly exists.

There has been much talk of Japan's long-term schemes to diversify exports and develop new export items. However, it has become evident that Japan's need for more exports exists urgently in present and not future. It is only natural, therefore, that industries which are capable *now* of an *immediate* increase in exports should attract greatest interest. Foremost among these is textiles.

Increased Exports to U. S. Will Be Asked—Therefore, it is inevitable that next few months will bring quiet but concerted campaign by Japanese Government and trade organs to boost textile exports to U. S. Pressure to make cotton-goods quota system more flexible will be one form of this effort. There will doubtless also be pressure to remove Geneva-reservation tariffs on wool goods. There are rumblings in the U. S. against increased imports of silk fabrics. But any American move to restrict these will be vigorously fought by Japanese. Rayon and synthetic textile products have not yet become a battle field of this struggle, except as synthetics in "mixed cotton goods" have been involved.

Japanese to Make Acrilan—Manufacture of Chemstrand Corp.'s acrylic fiber Acrilan will start in Japan a little more than a year hence. The Government has approved the establishment of a jointly-owned company by Mitsubishi Rayon Co. and Chemstrand (in ratios of two-thirds and one-third ownership, respectively). This new company, Shinko Acrylic Fibers Co., Ltd., will have a production capacity of 7,500,000 pounds of staple a year at first, and will plan to double that figure as soon as practicable.

Japanese Textile Output Rise Predicted—Total textile production in Japan in 1962 will be more than 70% above the 1955 level. By 1967 it will be almost 90% above 1955, the Ministry of International Trade and Industry predicts. It is significant in the nation's over-all economic planning that these increases are much below the rate of gain forecast for manufacturing industries as a whole, which will be up 102% by 1962 and 147% by 1967 (compared with 1955). A similar prediction for rayon pulp implies that ten years hence Japan will approach the point of self-sufficiency in domestic production.

Exporters of silk fabrics to the U. S. are concerned over the price-cutting which has accompanied a scramble by individual sellers to acquire a larger share of the growing American market. Stronger price-control regulations, and even export quotas for some types of silk cloth, may be the result of this erratic situation.

BETTER YARNS AT HIGHER SPEEDS

with HERR Conical Rings and Flyers!

For 6 oz. Wool and Dacron Blends

5/16" Face Conical Ring. The most popular ring to produce light count yarns at high spindle speeds.

Extra-light-weight bobtail.

Four-arm short brass or aluminum base with balance bail wire.

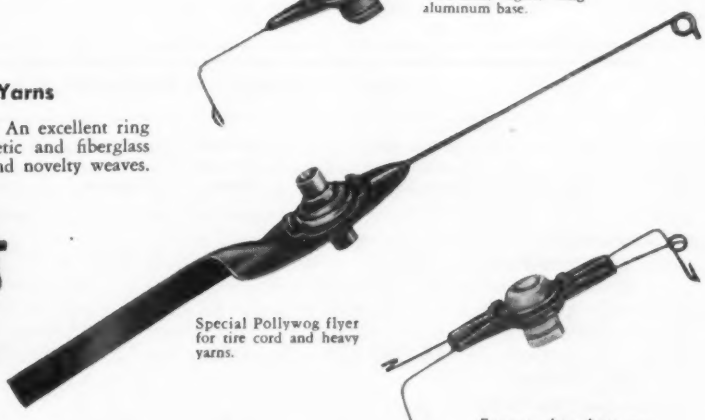
For Medium Counts

3/8" Face Conical Ring for worsted, orlon, nylon, dacron and blended yarns of all types.

Two-arm, light, long aluminum base.

For Medium to Heavy Yarns

4 3/64" Face large diameter Conical Ring. An excellent ring for spinning and twisting wool, synthetic and fiberglass yarns for carpeting, tire cord, woolens and novelty weaves.



Special Pollywog flyer for tire cord and heavy yarns.

Four-arm long brass or aluminum base

Special Flyers for Helanca and Stretch Nylon Yarns

Better yarns at higher speeds are the rule with Herr Conical Rings and Herr Flyers. Clean, smooth yarns, heavier doffs, less yarn breakage, fewer knots. Designs of flyers and travelers have been worked out for handling synthetics and blends.

ACTION OF TRAVELER EQUALIZES YARN TENSION TO REDUCE BREAKAGE

Your problems will have the immediate attention of the Herr technical staff. Write or phone today.

HERR

MANUFACTURING CO., INC.

308 FRANKLIN STREET, BUFFALO 2, NEW YORK

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

Lofted Carpet Yarn

(Continued from Page 36)

be obtained by the use of a fiber having an entirely new cross-sectional shape. This fiber is designated as Tennessee Eastman's No. 35 and has a smooth surface as seen in Figure 4 which shows for comparison the characteristic shape of regular acetate, viscose, nylon, and wool.

The change in cross-sectional shape gives No. 35 continuous filament yarn a specific volume approximately 18% greater than that of regular continuous filament yarn prior to lofting. In addition to increased cover, this fiber is significantly stiffer than the regular cross section resulting in greater pile resilience and resistance to distortion. Because of the smoothness of the fiber surface as compared with the serrated cross section of both regular acetate and viscose fiber, No. 35 yarn resists soiling to a greater degree. This comparison in smoothness can be seen in Figure 4.

It was recognized that the high luster of bright acetate yarn is undesirable for most applications in the carpet trade because of low consumer appeal and more rapid apparent soiling than dull lusters. In view of this, a special semi-dull luster was developed. The new lofted carpet yarn is currently made in both bright and semi-dull Estron and in delustered Chromspun colors as well as bright colors. The only difference between Chromspun and Estron yarns is that Chromspun is solution dyed. Performance characteristics are identical.

Comparative Carpet Evaluations

In order to establish accurately the merit of this newly developed yarn in carpets, extensive tests were set up to compare lofted yarn with yarns made from fibers now in use in the floor covering field. The purpose of this study was to compare the general appearance, crush resistance, resilience, soiling, cleanability, and abrasion resistance of the various fibers and to

TABLE I COMPARATIVE EVALUATION OF YARNS AND FABRICS

Fiber Type	Denier per filament Staple Length	Strength Gms. per Denier	% Elongation	Actual Total Denier	Stitches Per Inch	Stitch Length Inches	Yarn in Fabric Oz./Sq. Yd.
Spun Wool Carpet Yarn	Varied	.55	19.6	5160	8.0	1.08	36.8
Spun Viscose Carpet Yarn, 50% Bright 50% Dull	15 D/F - 7"	1.55	12.0	5111	8.0	1.15	38.9
Spun Nylon Carpet Yarn, Bright	15 D/F - 7"	2.81	42.3	5594	8.0	1.09	40.2
Spun Estron Acetate Staple, 50% Bright, 50% Dull	16 D/F - 7"	.79	30.7	5654	8.0	1.00	37.3
Cont. Filament lofted Estron Acetate Carpet Yarn, 2700/2 ply, semi-dull	16 D/F	.81	26.9	5774	7.7	1.14	37.4
Cont. Filament lofted Estron Acetate Carpet Yarn, 5300 denier, semi-dull	16 D/F	.74	29.2	5250	8.5	1.05	38.1

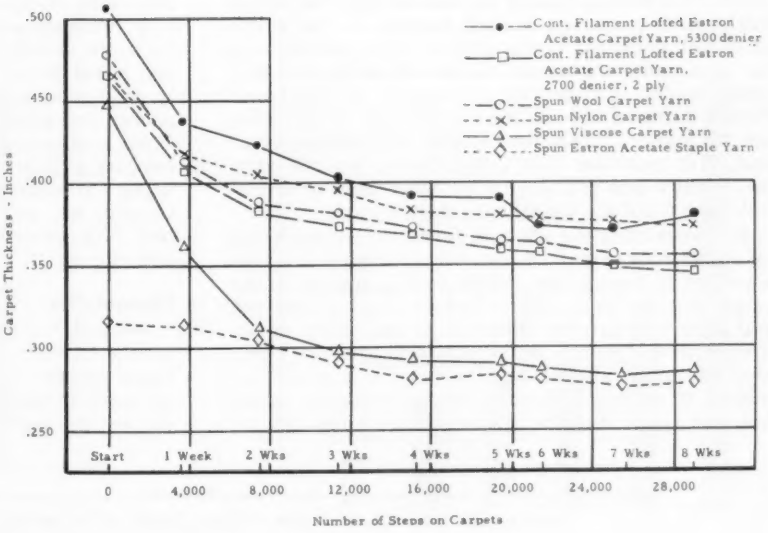
Also built into the new carpet fiber is the characteristic of crimping more readily in hot water. This property permits more satisfactory carpet textures which resist distortion in subsequent wet treatments more readily than those made from acetate of regular cross section. This characteristic is also important in the manufacture of twist set carpets.

After considering the factors of crush resistance, soiling rate, abrasion resistance, hand and texture, a denier per filament of 16 was selected as optimum for use in carpets. Eight denier per filament was established for use in scatter rugs where greater softness is desired.

determine whether this new type of yarn had significant advantages over those currently used. Yarns of carpet wool, viscose rayon, nylon, and regular acetate staple were spun by a supplier of quality carpet yarn into 2's/2 cotton count yarns with a singles twist of 4½Z and a ply twist of 3½S. These yarns were then tufted along with lofted continuous filament Estron acetate yarns of comparable size into loop pile carpets on a yardage tufting machine of 5/32" gauge, at a pile height just under 3/8" with 8 stiches per inch.

The yarn description and fabric constructions for this study are outlined in Table 1. The carpets were

FIG. 5 - CRUSH RESISTANCE COMPARISONS
ON-THE-FLOOR TEST



given a standard scour to remove any oils present. A set of fabrics for on-the-floor comparison was dyed to match the cream color of the natural wood sample to provide a more equitable basis for soiling rate comparisons. This series of carpets was placed on the floor in a busy hallway to determine the comparative crushing, soiling, resilience after wear, cleanability, and general appearance.

A step counter was used to record the number of steps on the carpets during the test period. The test was continued for eight weeks with a total traffic of approximately 30,000 steps on the carpets. Each morning the samples were vacuumed. Once each week the samples were taken up for testing after which they were replaced in a different relative position. Other carpets in the same series were tested for accelerated abrasion resistance, furniture leg packing, and accelerated soiling.

Crush Resistance and Resilience

The fiber comparison studies showed that the greatest performance improvement brought about by the lofted Estron yarn was that of resistance to packing in areas of heavy traffic. Each week the samples were removed from the floor and the thickness was accurately measured by the use of a Compressometer which applies .1 pounds per square inch pressure to the face of the carpet surface when the thickness measurement is made. The results of these weekly measurements are plotted in Figure 5. The improvement in acetate crush resistance which has been accomplished by this new type yarn is seen by comparing the curve for regular acetate staple with those for lofted Estron carpet yarn. This study indicates that lofted Estron yarn resists crushing to approximately the same degree as do wool and nylon yarns, while being considerably better than viscose.

In an effort to measure the original and continuing resilience or springiness of the carpets made from the various fibers, a test was established based on work

FIG. 6 - WORK-OF-COMPRESSION COMPARISON
ON-THE-FLOOR TEST

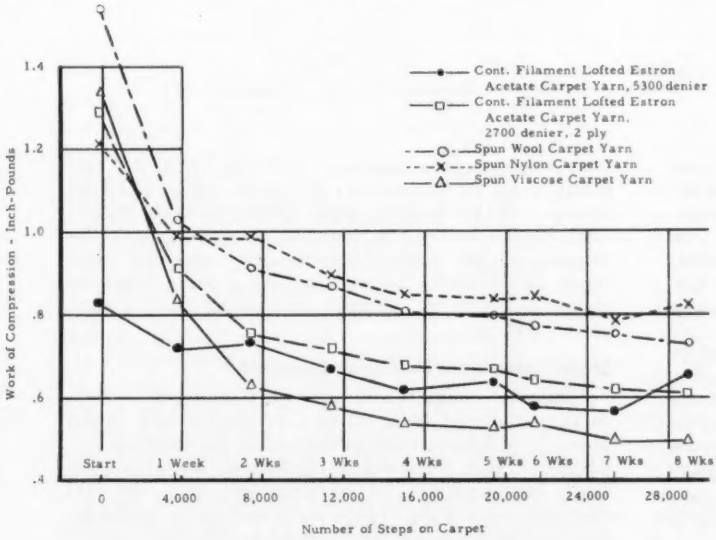
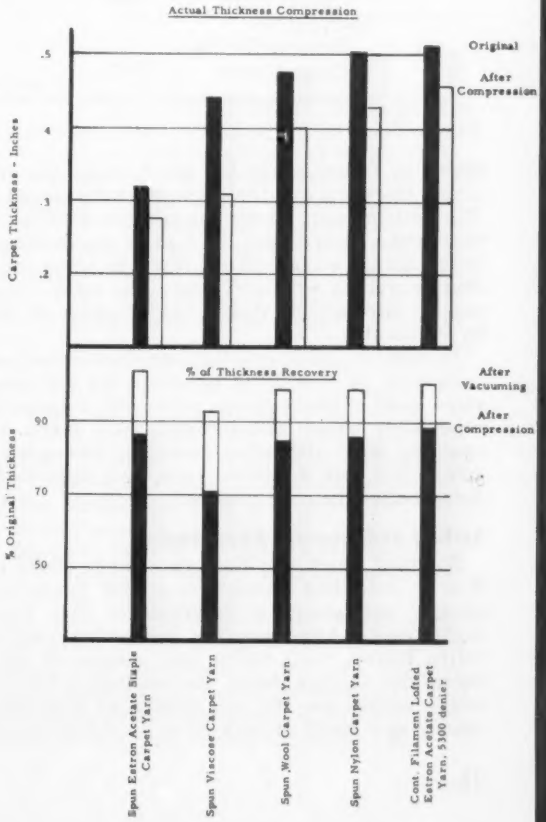


FIG. 7 - FURNITURE LEG COMPRESSION COMPARISONS



done by Beckwith and Barach of Alexander Smith & Co. In this test an accurately measured load is placed on the carpet in increasing increments, and the carpet thickness is measured at each increment. The curve of carpet thickness versus load is then plotted, and the area under the curve, designated as the work of compression, is taken as a measure of resilience. Figure 6 shows the values of work of compression for the various fibers during the on-the-floor wear test. This indicates that lofted Estron acetate yarn has slightly less resilience after wear than wool and nylon yarn but more resilience than viscose.

In determining the effect of furniture leg markings on the various carpets, a test was developed in which a load of 28 pounds per square inch is applied to the carpet for two hours after which the load is removed and after five minutes thickness is accurately measured with 0.1 pounds per square inch pressure being applied during measuring. The sample is then vacuumed 40 strokes and an additional thickness measurement taken. Results of this furniture leg test are shown in Figure 7. The top graph shows the original carpet thickness and the thickness after compression. The bottom chart shows the percent original thickness after compression and after vacuuming. The lofted Estron acetate yarn proved to resist compression as well as wool and nylon and better than viscose. It also responded well to restoration of the pile by vacuuming.

In order to more exactly reproduce actual service conditions in measuring furniture leg marking, the same loads as above were applied for a period of one week after which measurements were taken. In this case, the wool and nylon recovered somewhat more completely than the lofted yarn, with the lofted yarn being better than the viscose.

Soiling and General Appearance

Samples which had been exposed to traffic on the floor as described above were graded for soiling and general appearance at intervals of two, four and eight weeks. After scouring and before testing, the lofted Estron, wool, nylon, and viscose all had very acceptable texture, hand, and resilience. The acetate staple carpet was flat and somewhat distorted, primarily as a result of beck scouring. After four weeks the appearance of the wool and lofted yarn carpets was relatively unchanged, while the other carpets had noticeable change in appearance due either to excessive fuzziness and pilling or to excessive matting. From the standpoint of soiling after four weeks, wool and lofted Estron acetate were ranked almost equally good with wool slightly better, viscose somewhat poorer, and nylon poorest.

An accelerated test was also run on the identical samples with a ball mill type carpet soiling machine using a standard synthetic soil. The ranking of these samples was the same as for the on-the-floor soiling test, with somewhat less spread between lofted Estron and viscose.

Cleanability

After the eight-week on-the-floor test series had been completed, the carpets were cleaned by a professional carpet cleaner using the in-plant rotary brush shampoo technique. The cleaned carpets were then judged for appearance, apparent soil removal, surface fuzziness, and hand as shown in Table 2. Considering all of the factors listed in Table 2, lofted Estron was rated above other synthetic fibers tested. Each carpet was given identical treatment and the carpets whose texture appearance remained good could undoubtedly have withstood a more vigorous cleaning treatment, thereby improving their cleanability rating.

TABLE II APPEARANCE OF FLOOR TESTED CARPET AFTER ROTARY BRUSH SHAMPOO

Carpet Type	*Texture Appearance*	*Apparent Removal of Soil*	*Surface Fuzz*	*Hand*
Spun Wool Carpet Yarn	Good	Good	Good	Good
Cont. Filament lofted Estron Acetate Carpet Yarn	Good	Fair	Good	Good
Spun Nylon Carpet Yarn	Good	Poor	Poor	Good
Spun Viscose Carpet Yarn	Poor	Poor	Good	Poor
Spun Estron Acetate Staple Carpet Yarn	Poor	Fair	Good	Poor

Stain Resistance and Spot Removal

While the comparative tests were being conducted, carpets made of both lofted Chromspun and lofted piece-dyed Estron were submitted to the National Institute of Rug Cleaners at Bethesda, Maryland for basic investigations of staining and spot removal characteristics. Fifty typical spots and stains commonly encountered in service were set up on these carpets by allowing them to age for two weeks.

It was found that neither the Chromspun nor the Estron were easily stained permanently by stains that affect some other carpet fibers and both types of carpet released most spots and stains easily with the Chromspun loop pile being slightly better than the cut pile Estron used in this work. For example, stains such as blood, orange soda pop, coffee, coca cola,

FIG. 8 - COMPARISONS IN DEGREE OF ABRASION
2400 CYCLES - EMERY CLOTH ABRADER

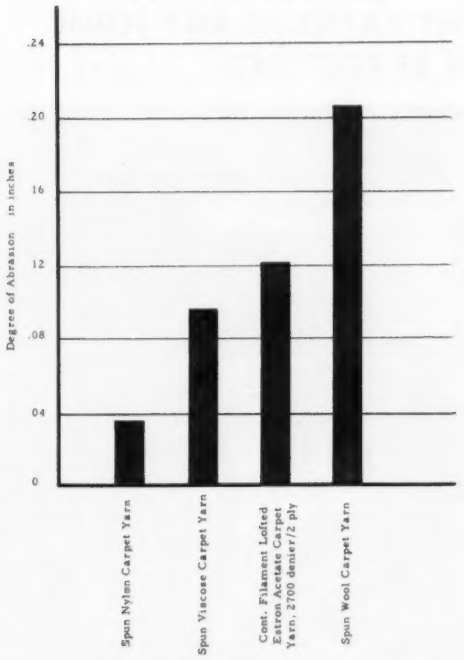
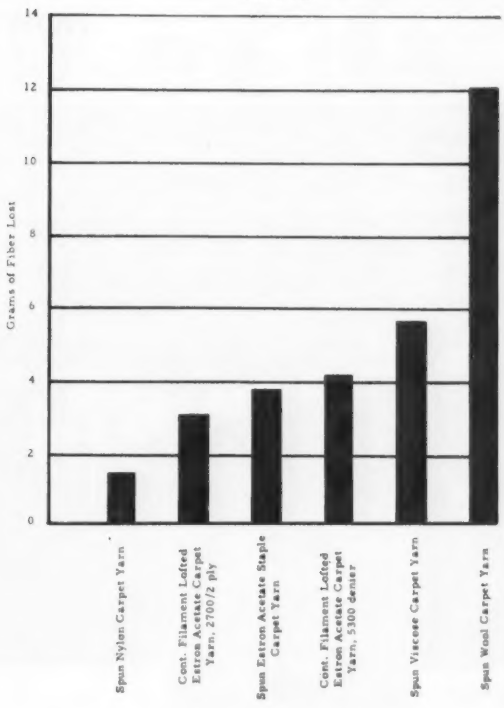


FIG. 9 - VACUUM CLEANER SHEDDING - ABRASION COMPARISONS
3 Hour Test



animal stains, crayon, tar, nail polish, furniture polish, and red clay were removed without any trace remaining from the Chromspun carpet.

Abrasion Resistance

Observation of the comparative floor test samples after eight weeks indicated that the test was not severe enough from the standpoint of abrasion to provide a basis for judging this characteristic. Therefore, the abrasion resistance data presented in this article is based on accelerated tests.

The first test used involves dragging a curved block covered with "fine" grade emery cloth back and forth over the carpet. This block exerts approximately two pounds per square inch pressure on the carpet, and a vacuum follows the block picking up the loose fibers caused by abrasion. The emery cloth is changed after each test. The results at 2400 cycles on the comparative series are presented in Figure 8. Carpet thickness before and after abrasion is accurately measured and the change in thickness is taken as the degree of abrasion. On this test lofted Estron ranked better than wool and slightly under viscose, with nylon first.

In addition to the emery cloth abrasion test, another test was devised which combines the factors of shedding and abrasion and is useful in determining fraying tendency. In this test a rotary brush vacuum cleaner is mounted so that the full weight of the cleaner is resting on the carpet, and the vacuum then moves back and forth over the carpet for three hours. The severity of the test is such that a considerable amount of abrasion occurs. The original and final weight of the carpet is determined accurately, and the weight of fiber collected by the vacuum cleaner is also accurately determined. The results of this test are shown in Figure 9. While nylon showed the smallest amount of fiber loss, both staple acetate and lofted continuous filament acetate proved superior to wool and viscose, with wool showing about three times the amount of fiber loss of the acetate.

Recent comparisons of the number of steps required to wear to the backing carpets of wool, viscose, and lofted Chromspun mounted on a stairway showed viscose and Chromspun to wear through at approximately the same number of steps, while wool required a somewhat larger number of steps.

Conclusions

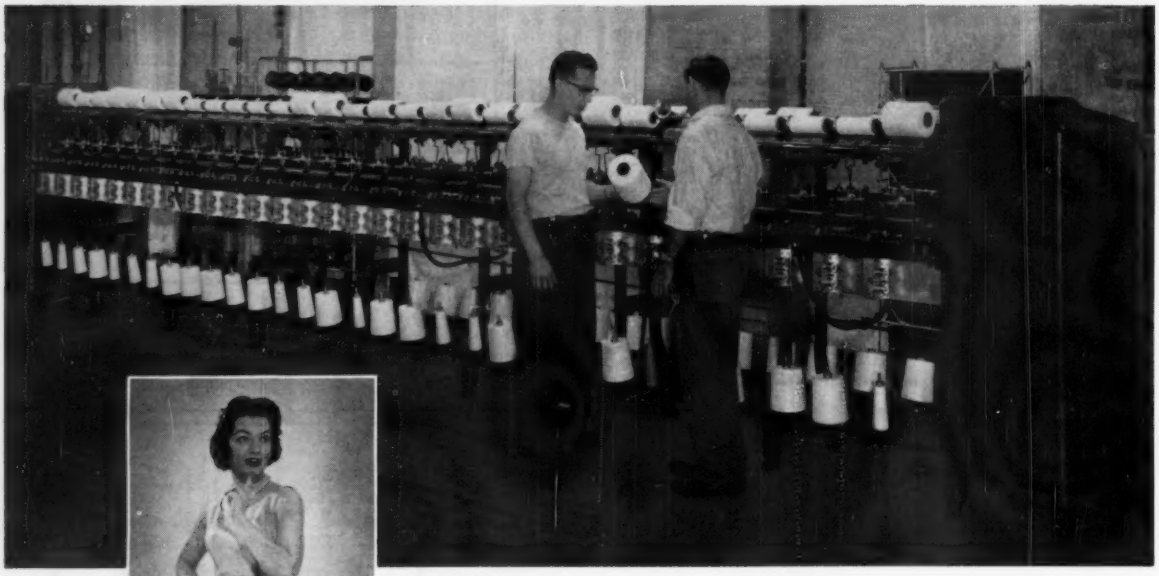
Results of the comparative tests discussed in this article demonstrate that the new lofted continuous filament Estron and Chromspun carpet yarns developed by Eastman offer the carpet trade a low cost yarn with crush resistance and resilience essentially equal to that of wool. Loop pile carpets made from this yarn retain their original appearance after wear better than those of other synthetic fibers tested, being less subject to crushing and pilling. They have exceptionally good resistance to packing in heavy traffic areas.

New heavy denier lofted continuous filament Estron and Chromspun acetate resist soiling to a greater degree than other synthetic fibers tested and almost as well as scoured wool. The stain resistance and spot removal characteristics of these yarns are outstanding.

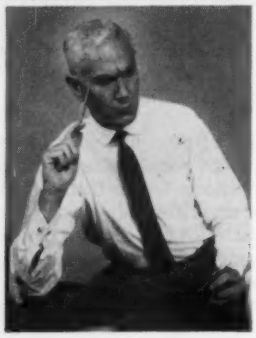
Abrasion resistance of lofted Estron carpet yarn as measured on accelerated tests is greater than wool and about the same as viscose, only nylon being greater. Stairway tests show lofted Chromspun and viscose to be equal in abrasion resistance with wool somewhat better.

This new yarn virtually eliminates shedding and pilling and gives improved cover over spun staple carpet yarns. The uniformity of the new Eastman carpet yarns results in improved processability, and their outstanding resistance to moths, mildew, mold, and silverfish contributes to long carpet life. ■

NOW FILAMENT YARNS IN ANY FORM CAN BE TEXTURED!



DRESSES
SKIRTS
BLOUSES
LOUNGE WEAR
LINGERIE
UNIFORMS
SNO-SUITS
GIRDLES
SWIM WEAR
PIECE GOODS
UPHOLSTERY FABRIC
DRAPERY FABRIC
RUGS
MEN'S DRESS & SPORT SHIRTS
JACKETS



U. S. Acme Texturizer Opens New Market Possibilities In Texturing Standard Yarns

You know that "TASLAN"* textured yarns are bringing new luxury, new rich touch and new lightweight comfort to an almost unlimited number of finished products. Now, all filament yarns (either as single ends or in combination) can be textured to interesting new forms that create extra selling opportunities.

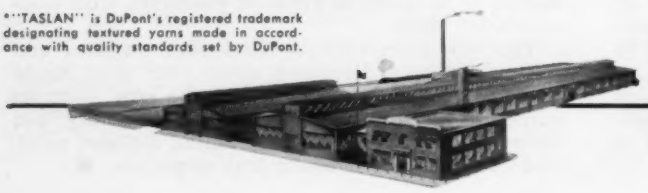
The first efficient production unit for texturing filament yarns is the 60-spindle U. S. ACME TEXTURIZER shown above. This new machine is designed for both the wet or dry process of texturing twisted or untwisted filament yarns from cakes, cones, pirns, spools, etc.

Mill operators tell us it gives them a whole new quality and profit approach to yarn texturing . . . with its new, bigger, uniform headless packages, its positive yarn feed control, its simplicity of threading and accurate tensioning.

Get your order in now . . . U. S. ACME TEXTURIZERS are NOW BEING BUILT IN THREE MODELS—60-spindle unit shown above; 50-spindle model for heavier deniers, larger packages; and Single Spindle, Portable Machines.

U. S. TEXTILE MACHINE COMPANY • Scranton 8, Penna.

*"TASLAN" is DuPont's registered trademark designating textured yarns made in accordance with quality standards set by DuPont.



U. S. TEXTILE

designers and manufacturers of
U. S. ACME MODERN THROWING EQUIPMENT

PAPERS OF THE
AMERICAN ASSOCIATION FOR
TEXTILE TECHNOLOGY INC.®

AATT

How Ford buys AUTO FABRICS

By E. Zagiel

THE FIRST MATERIAL to be selected for an automobile is the upholstery fabric, or as we refer to it in Detroit, the bodycloth. This fabric is selected first because it is the focus of interior styling. Other materials used in the interior are then selected to match the appearance of the bodycloth. The stylists collect hundreds of designs about two years before the introduction date of a car. These designs may be fabrics used in furniture, draperies, or as dress goods. They may also be a mere sketch or a section of a rendering. Some of the patterns may come from various interior decorating houses both in this country and abroad, from art exhibitions and museums. When selecting these designs, the stylists try to guess at trends of color and style two years in advance.

The designs which have been picked by the stylists are shown to management. In this first showing, management selects from five to ten patterns for each model of a car line. The textile mills are then requested to reproduce these patterns in fabrics of automotive quality.

Up to this stage, the fabrics were considered solely from an appearance point of view. However, as soon as the mills are requested to produce automotive fabrics, Engineering gets involved in this development work. The various designs are shown to the engineers for examination, and when possible, the materials undergo some preliminary tests. Meetings are then held with Styling, Engineering, and the suppliers, at which time the engineers guide the mills in remaking the fabrics. This involves direction as to the type of fibers and yarns to be used, and rearrangement of the structural and surface characteristics of the cloth so that it will be made to automotive requirements at the budget price. The engineers try to accomplish this with as little change as possible in the appearance of the fabric, so that its styling characteristics and sales appeal will be preserved.

Presented at Oct. 2, 1957 meeting.

Next, the mills get busy setting up their looms, and weave, dye and finish small quantities of fabrics. These fabrics are converted into seat covers, and are installed on automobile seats. Thus, they exhibit the appearance they will assume in a car. Also, a quantity of these fabrics is sent to Engineering for production processing feasibility investigation and laboratory evaluation. The trimmed seats are shown to management, who chooses the fabric to be used. Management's final decision is based on the eye appeal and the structural characteristics of each fabric.

The stage of development is now at about one year before actual production. The mills which submitted the chosen fabrics are requested to weave additional yardages in the various colors which harmonize with the color of the exterior. These fabrics must represent production quality, and are, therefore, woven and

Mr. Zagiel is a research engineer in the textile Laboratory of the body engineering department, Ford Motor Co., Dearborn, Mich. He holds a B.S. degree in textile engineering from Lowell Technological Institute, and an M.S. degree in textile technology from Massachusetts Institute of Technology. Before joining Ford, he worked for S. Blumenthal & Co. A member of the Textile Institute, he has written several papers for technical journals.

E. Zagiel

HOW LONG WILL IT WEAR?—Durability is one of the most important criteria in evaluating fabrics for use in autos. Here a Ford textile technician examines a fabric sample just taken from a wear testing machine

finished to meet standard bodycloth requirements, and are fully evaluated by the laboratory for physical, chemical and colorfastness properties. Once a fabric is approved, Engineering issues master samples to the various activities within the company.

At the same time, the Purchasing Department of each division arranges schedules for production quantities, and negotiates the final price of the fabric. When master samples have been established, Purchasing also arranges for additional sources of supply. Once production shipments arrive in the various plants, the Quality Control Departments check representative samples in order to insure the quality of materials going into cars. Naturally, when the proper quality level is maintained, we can expect less difficulties in production and more satisfaction from our customers.

The procedure which I just described is quite lengthy and somewhat complicated. However, it is very essential for us to follow it and be extremely careful before making our final choice. After all, the styling and quality of our vehicles, and the satisfaction of the people who buy them will determine our present and future sales.

General Requirements for Auto Fabrics

Every employee who joins our engineering activity receives a lecture followed by movies which describe the making of an automobile from the planning stage down to the finished car leaving the assembly line. He is also given an opportunity to watch the actual assembly operation. There is a good reason for doing that. Every person in our organization will be more effective in carrying out his specific task if he realizes where he stands in the chain of events leading to building a car, and, in general, if he knows what it is all about. This same principle holds true for our suppliers. For this reason, I would like first to relate to you some of the engineering requirements for automotive materials in general.

The first thing to consider is the nature of our industry. Basically, we assemble various component parts into one unit which we call subassembly. These subassemblies are finally put together into a finished vehicle. Also, our assembly lines operate under the principle of mass production. Therefore, any product used in a car must conform to this system of operation. Materials should be easy to handle and process. Parts should be easy to produce and assemble. Subassemblies are to be simplified by using less parts to begin with, and by utilizing compatible materials and prefabricated structures. Also, materials have to be plentiful and easily obtained from several sources. The more we go in this direction, the less chances we have to encounter production difficulties, and we always keep one idea in mind—the assembly line must never stop.

Another factor to take into consideration is performance and durability in the field. We never know exactly who will be using a particular car. It may be used by a charming old lady who only drives her car to church on Sunday, or it may be subject to rough handling. Some cars are used in the freezing North, and others are baked under a hot tropical sun. We have to consider these conditions when we specify requirements for materials, but, above all, we have to establish standards of quality and endurance, as in the long run this is the "acid test" for the acceptance of our product by the public.

When the automobile was introduced by the turn of the century, it was considered a luxury, and only a few people could afford to own it. Today the automobile is a necessity, and is a part of our daily life. As such, we want to make it easy to keep and maintain. The idea of "wash and wear" fabrics in the apparel field when applied to us means seat fabrics which do not soil readily and which are easy to clean. Also, we want the car to have simple parts and assemblies which can be easily replaced once they are worn out.

Vehicles are designed and built to specified dimensions. The Car Planning Department establishes length, width, and height of a car in order to meet road conditions. In addition, they specify head and leg room inside the car. We have in our area a dummy named "Oscar." Oscar is an eighty percentile man, and represents the overall body dimensions of the *average* male and female driver. The seats are then custom built to fit Oscar. We go to all this trouble in order to achieve optimum comfort for the driver and the passengers, and therefore, we require materials that meet standards of comfort. These standards pertain to heat transfer and absorbency of moisture and perspiration on materials which come in contact with the human body. They also relate to shock absorbency, and deadening of noise in general.

Safety is another important aspect of our general engineering requirements. Therefore, we use constructions and materials which add to the safety of the driver in case of collision accidents. We prefer materials which are non-flammable and which do not support combustion. This feature of safety is important both from the standpoint of our employees who process these materials in production, and from the point of view of the ultimate user of the automobile.

Engineering Requirements for Textile Materials

There is hardly a single type of textile structure which is not used in the automotive field, and practically every natural and man-made textile fiber is represented in these structures. We use threads; woven, non-woven, and knitted fabrics; fiber padding; braided structures; tufted materials; coated and laminated fabrics.

I am going to describe some of the important textile materials used in cars. I believe that I will be able to offer a better explanation and description of these materials if I classify them according to their area of application.

Seat Coverings

The seat covering material is made of two basic constructions—woven fabrics and vinyl coated fabrics. The woven fabric is used on the seat cushion and the seat back, in areas where most of the body comes in contact with the seat. The vinyl coated fabric is used mostly in bolster areas, on seat facing, and seat kick pad.

At this point, I would like to go into some detail and elaborate on the requirements for the two types of covering materials. The woven fabric has to meet the following minimum requirements:

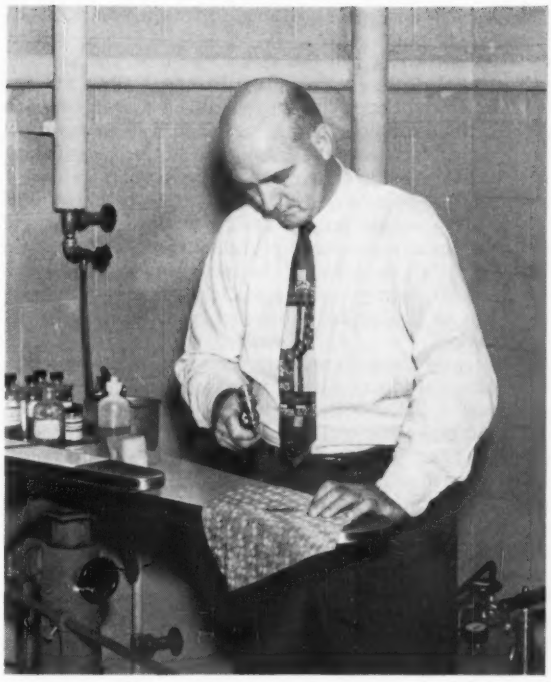
1. **Resistance to Abrasion**—The fabric is subjected to 1600 cycles on the Stoll Wear Tester, and 1,000 cycles on the Taber Abraser, under specified pressure and type of abradant. Only slight wear and fuzzing are allowed after exposure to this test, and by no means should the yarns break to form a hole in the fabric. Some fabrics contain raised patterns or nubby yarns on the surface. These styling effects should not be worn through. The fabric should also resist pilling and snagging. This is evaluated on a pilling tester.

2. **Strength**—The minimum tensile strength is 90 lbs. in the warp and 70 lbs. in the filling direction. This applies to both dry and wet conditions, and thus we control fibers which lose a portion of their strength under high humidity conditions. We also require the fabric to have adequate seam strength.

3. **Dimensional Stability**—Under a static load, we require fabrics to possess warp stretch in a range of 2-7%, and a set of 0-2%. The filling stretch is 3-7%, with a set of 0-3%. We are striving to shift the filling stretch to a higher range without materially changing the present set, thereby achieving more elasticity in the fabric across the seat. The maximum allowed shrinkage in the warp or the filling is 5%. The shrinkage of the fabric is measured in its dry state after being soaked in room temperature water, or when exposed to steam. The shrinkage of woven plastic fabrics is determined after exposure to a 180°F. water bath.

4. **Stiffness**—The degree of stiffness helps us to determine to some extent the "hand" of seat fabrics and their trimming qualities. We evaluate this by measuring the bending modulus of a fabric with the Shirley Stiffness Tester. We find that most of the acceptable fabrics exhibit bending modulus not higher than 150 kg./cm.^{3} in either the warp or the filling direction.

5. **Colorfastness**—Lightfastness properties are evaluated under dry and wet conditions in a Fadeometer. We require fabrics to withstand an exposure period of 80 standard fade hours. Samples are also sent to test stations in Florida and Arizona for exposure to sunlight under glass for 100 hours. Other colorfastness properties checked are: resistance to bleeding, perspiration, spotting, dry and wet crocking.



WILL IT CLEAN EASILY?—For seat covers and other exposed auto fabrics, ability to resist soiling and clean easily is important. Here a fabric is subjected to a soiling test

Basically, the vinyl coated fabric has to meet the same requirements as the bodycloth, except that some differences exist in the manner and type of testing due to the inherent differences between the two materials. Some of the specific requirements for vinyl coated fabrics include adhesion of coating to backing, trapezoid tear strength, resistance to deterioration and migration staining at 180°F., no cracking of the vinyl at −30°F., and resistance to hydrogen sulfide staining.

So far, I have mentioned what we at Ford Motor Co. require from a seat cover material whether it is woven or vinyl coated. In order to summarize and give a better picture, I would like to state what we may expect from an idealized model fabric. For one thing, the appearance of the fabric should not change from the time it is installed in the car. This means that it should possess sufficient elasticity to fully recover after application of dynamic loading during driving, and exhibit no wear, tear, or change of color.

Also, it should repel any liquids or soil which are applied to its surface, and should not support combustion. The material should be breathable and should absorb perspiration, have warm feel in winter and cool in the summertime. It should have the proper coefficient of friction for easy sliding while entering or leaving the car, without creating static electricity; and at the same time, not be too slick for the driver to slide off the seat when applying the brakes.

As far as processing is concerned, it should be easy to lay cut the fabric in production and then sew or bond the material without difficulty, while the

fabric exhibits good resistance to fraying and dimensional distortion.

The pattern of the fabric will be abstract with no directional designs which require more time to control in production. The fabric can be woven on high production common looms, and should be piece dyed in order to facilitate production scheduling. And last, but not least—the fabric should be economical.

It may be asking quite a lot to attain a fabric with all of these properties. Naturally, we have to contend with various styles, color and surface effects, and with the "all important" budget. However, we are striving constantly to come as close as it is practically possible to the model fabric when we engineer our materials.

Currently used woven fabrics vary in construction and composition of fibers. In passenger cars, we use jacquard fabrics with 100 to 175 ends per inch, and 30 to 50 picks per inch. Their weight ranges from 10 to 15 ozs./sq. yd. Most of the fabrics are warp faced, where continuous filament nylon is used in the warp, and 2-ply spun viscose or cotton is utilized in the filling. Fiber composition in these structures ranges from 30-50% for nylon, and 50-70% for viscose or cotton. Other yarns or fibers like metallic, acetate, Arnel, or Dacron are used in small percentages, and mostly for decorative purposes.

Bolster fabrics are usually made with cam or box loom designs. However, their construction and fiber composition is similar to that of the jacquard fabrics. Tweed bodycloth fabrics usually come in a heavier weight, and will vary considerably in fiber composition, which depends on the particular pattern involved.

In station wagons, we use quite extensively various constructions of saran fabrics. These fabrics either contain all saran yarns, or, as of lately, saran warp and viscose or nylon filling. Their average construction is 50 ends and 30 picks, and they weigh from 14 to 16 ozs./sq. yd. Our regular truck fabric is also made of saran yarns. However, recently we changed in some cases to fabrics made of nylon and saran in both the warp and the filling, due to the heavy duty conditions to which truck seats are exposed in the field.

Every fabric used contains additional finishes. The most common finish is the application of backing. Latex backings were used quite extensively in the past. However, lately we started using more of the acrylic ester resin backing, which seems to impart good stability to the fabric, without increasing its stiffness, and has better aging qualities. Other finishes include water repellent treatment, calendering, and heat setting.

A popular vinyl coated fabric construction is a 1.06 broken twill topped with 12 ozs./sq. yd. of vinyl, used for heavy duty flat applications. Knit backed vinyls are used mostly in curved areas of the seat due to their high stretch characteristics. Other constructions like 1.85 drill vinyl are used purely from an economic standpoint. Cotton backing materials are used in most of these fabrics. An unlimited number of styling effects can be achieved with the vinyl coated fabrics. We use them with a variety of embossing designs, prints, metallic finishes, and so on.

Fiber paddings of different constructions are used in seat cushions and backs. The cushion pad usually consists of two pads—a lower pad which is placed next to the seat spring pad support, and a topper pad which is placed over it. The lower pad is generally made of low grade cotton, or cotton blended with sisal and jute. The topper pad in front seats is usually foam rubber, or as of recently, some polyether foam. Topper pads made of fibrous materials, such as rubberized hair, are used mostly in the lower priced cars. Seat backs usually contain cotton padding. Another application for fiber padding is in the construction of pleats, where they serve as a filler material

The requirements for padding materials vary with the type of padding used. The most important characteristic is resiliency, which we measure in terms of compression and recovery after application of a specified load, both statically and dynamically. The pad should compress to a point where it would conform to the contour of the body, but yet contain enough cushioning properties to feel comfortable. Upon release of compressive loads, the pad should fully recover in order to retain the original shape of the seat and not cause wrinkles and bagginess of the cover material. In addition, the pad should possess sufficient tensile strength and internal bond in order to be suitable for production processing from the material handling and actual buildup point of view.

In all other respects, it should be compatible with the seat covering material and its various characteristics. As a general rule, foam rubber and other synthetic foams seem to meet this requirement better than fiber paddings at the present time.

At this point, it might be appropriate to consider the possible trends we expect in the future design of automobile seats. The ultimate in seat construction would be a one-piece molded seat incorporating the frame, padding, and cover material in one unit. Until this ideal is achieved, we expect to see constant improvements in assembling the various parts of the seat. Heat bonding techniques will produce novel styling effects while eliminating certain sewing operations. Further developments in this field may eliminate the sewing operation entirely. We also expect to see simplified seat constructions and prefabricated subassemblies reaching our assembly line.

Door Panels

Vinyl coated fabrics practically dominate the field of door panel covering materials. Woven fabrics are used occasionally in sections of higher priced cars where certain styling effects are desired. Among the reasons for the widespread use of vinyl on door panels is its toughness and durability, ease of cleaning, impermeability to water, and low cost. Some of the weak points of vinyls used on seat cushions, like lack of breathability, are a definite advantage in door panel applications. In addition, heat bonding techniques which are used widely on door panels can be applied easily to vinyls.

Door panel vinyl materials are made of cheaper and weaker constructions than seat vinyls, as they are not designed to withstand dynamic loading. These vinyls are applied to the door panel in two fashions. In one case, a vinyl fabric is initially sewn to a subfoundation, and is later adhered to a door panel foundation board. This vinyl must be supported with a fabric in order to facilitate the sewing operation. In the other case, the vinyl is applied directly to the board by means of heat bonding. The vinyl used in this process can be either a coated fabric or an unsupported film.

The same general requirements apply to both door panel and seat vinyls, except that on a door panel the requirements are less strict. However, where heat bonding is employed, the materials have to meet additional production processing requirements pecul-

iar to either the dielectric or the heat sealing process in order to be satisfactorily bonded.

Door panel fiber paddings are also classified into two categories. Padding for the sewn door panel is made of waste cotton, wool, or viscose fibers which are held together with a resin. In the heat bonded panel, we use a high grade blend of waste wool and virgin acetate fibers. A high quality clean pad is necessary to insure successful bonding. The binder resin in this pad holds the fibers together, and also acts as a bonding medium. In general, the padding is required to possess good resiliency so that the desired three dimensional effects will be produced. Also, adequate tensile strength and dimensional stability are needed for production handling.

As far as future developments are concerned, it is only a matter of time before molded, one-piece door panel and arm rests will be used in automobiles. Vacuum forming techniques may be used along with this process. It will be necessary then to form the vinyl cover to the shape of the door panel foundation, and at the same time, impart distinctive patterns to the vinyl.

Carpets

Metal floor pans of cars are covered in order to give them a more pleasing appearance. The floor covering materials also serve as heat insulators and sound deadeners. The carpet gives the floor all of this, plus a luxurious feel and cushioning effects.

Until recent years, automotive carpets were woven on carpet looms. Now, tufted carpets are used exclusively in our vehicles, because we get good quality carpets at lower cost. Also, we can expect better scheduling of production shipments, as the production rate of tufting machines is about eleven times greater than the rate of carpet looms.

Most of the pile yarns are made of heavy denier viscose fibers. Occasionally, the viscose fibers may be blended with a small percentage of nylon. Blends of viscose and acetate are used in cases where special color effects are desired. The pile yarns are tufted into jute fabrics, and a heavy latex coating is applied to the back of the carpet in order to anchor the pile in the base fabric.

Our requirements for carpets include resistance to abrasion, tensile strength, dimensional and color stability. We expect a resilient pile construction which will not mat down. Also, the pile should be of the proper density so that the jute backing will not show through as the carpet follows the contours of the floor.

Presently, carpets are converted into floor mats by cut and sew methods. However, in the next few years, we expect this operation to be replaced entirely with preformed carpets. The design of cars with lower silhouettes which resulted in the introduction of deep contoured floors will hasten this development. Other future developments will be aimed to improve the durability and non-soiling properties of carpets.

Headlinings

The main purpose of a headlining is to serve for decorating purposes. However, it also acts as a sound deadener and heat insulator in conjunction with a fiber padding. The headlining fabric is cut into sections which are later sewn together with a listing. Metal rods are inserted through the listing.

The headlining is then installed in a car by placing the metal rods on each side of the roof rail. The fabric is pulled tight at the front and rear of the roof, and is kept under tension by tacking the fabric, and placing it under moldings. Steam is then applied to the headlining in order to shrink the fabric, and remove wrinkles which may have been produced during installation. This is a lengthy and costly operation and an area where the application of new methods and materials could be rewarding.

Until a few years ago, headlinings were made mostly of napped cotton fabrics. Nowadays, we use a variety of headlinings made of vinyl coated fabrics, printed and embossed cotton fabrics, woven paper materials, as well as hardboard. Colorfastness and resistance to wicking are two properties which we require for actual field use.

Other requirements are necessary for production processing. These include tensile and tear strength, shrinkage, elastic properties, stiffness, and resistance to fraying.

Convertible Tops

Convertible top fabrics are subjected to more abuse than any other textile product used in the automobile. There are two types of convertible top materials, namely, woven and vinyl coated. In both cases, it is a laminated construction utilizing cotton fabric lining, a rubber compound in the center of the laminate, and a woven or a vinyl coated fabric as the outer ply.

The requirements for convertible top materials are as follows:

1. The fabric must possess good resistance to weathering when exposed to sunlight and humidity in Florida. It should also resist mildew growth.
2. The material should have excellent color stability to withstand 1,000 hours of exposure in a fadeometer. This we achieve by using solution dyed viscose in a woven top, and good quality pigments in the vinyl material. Requirements of dimensional stability are strict, and have to be carefully controlled. In addition, the material should possess sufficient tensile strength, flex-life, adhesion, resistance to water penetration, and wicking in order to stand up in the field.

Our most severe problems with convertible tops have been water leakage through the sewing needle holes, and wicking. The elimination of the sewing operation, and the use of heat bonding to join the various sections of the top will be a great step toward the solution of this problem. Other developments with top materials will probably be directed toward further improvements in their resistance to weathering, exposure, colorfastness, and soil pickup and cleanability.

Miscellaneous Trim Materials

Many other textile materials are used in automobile interiors. For example, we use nylon webbing for safety belts, where the material possess high tensile strength and shock absorbing properties. Other types of webbing are used in windlace materials to cover the sponge rubber, and as bindings to facilitate sewing operations. Different kinds of sewing threads made from nylon, cotton, or Dacron are used in various areas of the car. Elastic fabrics are sewn into convertible tops for ease of opening and closing the backlite. Each of these materials carries its own function in the overall design of an automobile; and in general, I may tell you that practically every phase of the textile industry is represented in automotive vehicles. ■

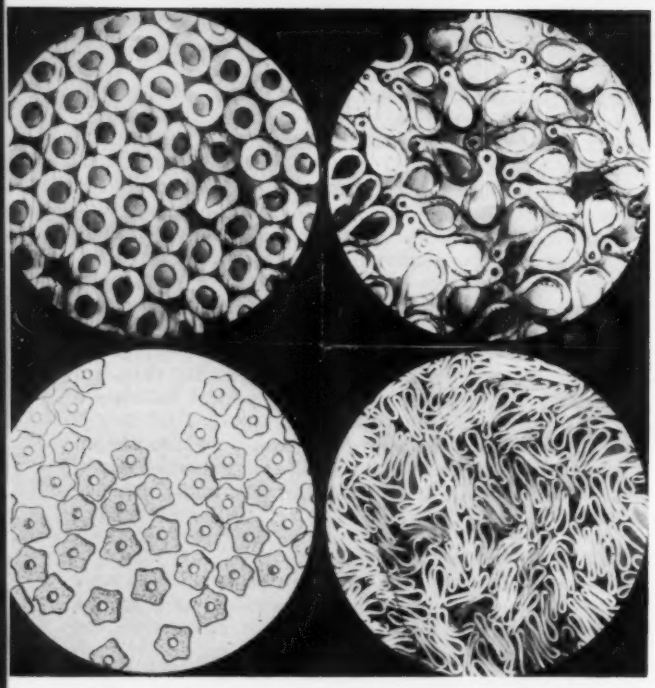


FIGURE 3—Microphotos of cross sections of newly developed hollow fibers. Upper left, circular hollow fibers; upper right, two-cell hollow fibers; lower left, profile hollow fibers; right, strip hollow fibers.

Cross-Sections

(Continued from Page 70)

fibers are reported to result in fabric textures and styling effects not otherwise obtainable.

Cross-sections produced so far are described as concertina, dog, horse-shoe, and stars with various, but predetermined, numbers of points. (Figure 1) Experiments indicate star-shaped sections are most useful for filament yarns, while the concertina and dog-shaped sections enable staple fibers to be spun, woven and knitted without any special preparatory treatment and with far less trouble than with smooth-surfaced staple.

To produce a grained outer surface, or a permanently dulled finish, on one of these smooth surfaced fibers, the Institut's research workers use a diluted solution of zinc chloride. This is applied at room temperature, and rinsing with water follows. This development is covered by DW Patent 10577, 15. October 1955: process for the production of grain outer surface and/or permanently dull textured synthetic linear high polymers.

Time of processing and strength of solution determine the effect obtained. This can range from a light etching to a heavy cross folding. It is possible to obtain an even deeper effect than that shown in the most heavily etched specimen in Figure 2, but, naturally, if the etching of the fiber is too deep, fiber strength is affected.

The zinc chloride not only changes the outer surface of the fiber, but also hardens it, and by so doing could almost constitute a possible alternative to steam setting.

Advantage of this process is that it can be applied at any stage of general processing: on the moving thread, on bobbins of yarn, loose staple or even on semi-finished goods. Thus a yarn can be modified at any stage to suit its end use, and appearance and handle can be improved to be more suitable for the purpose in mind. This process gives better stability, ensures more crispness in garments, and is said to overcome such difficulties as loop distortion in knitted structures under tension. It is also said to reduce pilling and separation of component fibers in blends.

The third process developed at the Institut fur Textiltechnologie der Chemiefasern is one for modifying the interior of smooth fibers. This process is covered by DW Patent 29 a 39 608, 29. October 1953: process for producing hollow artificial fibers. Inventor: W. Behm. This idea has been further developed and hollow profile threads have been produced by F. Bolland, their production being based on a new type of spinneret. The microphotos, (Figure 3) show enlarged cross-sections of circular hollow fibers, profile hollow fibers, strip hollow fibers, and two-cell hollow fibers.

Fiber interior can add much to the importance of a yarn. Hollow fibers have a lower specific gravity that decreases in relation to the proportion between skin thickness and cavity. Fabrics made from such fibers are fuller, fluffier and far more warmth retentive. It is claimed by the Institut that multi-cell yarns can be planned and produced for specific purposes.

Cotton Yarn Strength Tables

A set of tables for predicting the strength of cotton yarns, developed by J. F. Bogdan, director of Processing Research, has been published by the Department of Textile Research, School of Textiles, North Carolina State College. The tables are the result of work conducted by Bogdan in his continuation of studies of the factors affecting yarn quality initiated some time ago by the late Dr. F. T. Peirce.

Using these tables and the known strength of yarns spun from a particular mix of cotton, mill men can predict the strength of yarns from 6s to 50s spun from the same cotton using any twist multiplier from 2.5 to 5.5. Conversely, the twist multiplier required to yield a given strength in a given yarn number can be determined.

While the tables are primarily for carded yarns, they can also be used for combed yarns. *Copies of the tables can be obtained by writing the editors.*

Stretch Yarn Patents

Universal Winding Co., Providence, R.I., has been assigned three patents (Nos. 2,803,105, 2,803,108 and 2,803,109) relating to the process and the apparatus for manufacturing stretch yarn by the continuous or false-twist process by the inventors, Warren A. Seem and Nicholas J. Stoddard.

The claims allowed in these patents are said to be basic in scope and to cover broadly the stretch yarn apparatus recently manufactured by Universal and also the process of manufacture as licensed by the company. It is estimated that 90% of all torque stretch yarn now produced in this country is made on apparatus and by the process covered by these patents. The remaining production is by the non-continuous or "conventional" process which Universal assets has now been rendered obsolete by the continuous or false-twist process.

For the DYER and FINISHER

Polyethylene Glycol Data

A revised technical bulletin on polyethylene glycols has been published by the Industrial Chemicals Division of Olin Mathieson Chemical Corp. The bulletin lists applications, physical properties, specifications and shipping data on three compounds, Poly-G 1000, Poly-G 1500, and Poly G B-1530. All are white waxy materials melting between 38 and 45 degrees C. *For free copies, write the editors.*

Sanitized Men's Suits

The first completely Sanitized men's suits have been introduced by Ratner of California, it was announced by Sanitized Sales Co. of America. Ratner said the suits, to be known as the "Avizzio," will be delivered to stores during the last quarter of this year. The Avizzio will be cut from a Sanitized Earl-Loom fabric of Celanese acetate, rayon and silk. The lining will be Earl-Glo Sanitized.

New Coloray Colors

Seven new colors have been added to the basic color range of Coloray solution-dyed rayon staple, Courtaulds (Alabama) Inc., announced. The new colors, primarily developed for the drapery trade, where exceptional lightfastness in pastels is desirable, are also expected to find their way into the apparel field.

Geigy Adds Two Blacks

Two shades of black have been added to Geigy's fast-drawing, premetallized Irgalans series. They are Irgalan Black RBL, a reddish type, and GBL with a greenish cast. Both dyestuffs are recommended for wool in all stages of manufacture, and spun or filament nylon and raw silk. *For further information write the editors.*

New Finishing Aides

Richmond Oil, Soap & Chemical Co. has introduced the following products for use in the outerwear trade: Ban Scour—a special liquid soap with solvent properties designed primarily for the colored or pre-scour of Ban-Lon and other textured yarns; Scourpen 1611—a non-ionic surface active agent designed for the washing of Shetland, lambs wool, cashmere and wool blend sweaters; Rosoft—a cationic softener designed to give a soft finish on Shetland, lambs wool, cashmere and wool blend sweaters. *For further information write the editors.*

assure added sales appeal with
GLOBE–DYED SYNTHETIC YARNS

For fine hand, and superior knitting and weaving qualities, you can rely on Globe package-dyed ORLON—DACRON —NYLON—ACRILAN.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

Globe DYE WORKS CO
1865 1957

4500 WORTH STREET, PHILADELPHIA 24, PA.

JEfferson 5-3301

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in October 1957. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	High Turn Skeins & Cones 8½ Turns	12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.80
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.46	1.49
100/74**	.95	1.08	....	1.33	1.38	1.44
125/60	.94	1.05	$1.09	1.30	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45*	.97	....	$1.08	$1.08	$1.31	1.31	$1.39
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31
125/60	.84	....	.99	.99	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24
150/120	.81	....	....	.93	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.45	$1.35
1519**	155/90	....	....	1.45	1.35
2008	200/120	....	....	1.06	.96
2027***	210/120	....	....	1.06	.96
3002	315/180	$1.10	$1.00	....	....
4011	410/224	1.10	1.00	....	....
6001	600/360	1.08	.98	....	....
8001	860/450	1.08	.98	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1515 can be run in warp or filling.

*** Code 2027—Softer than 2000.

CUPIONI Type B

Code	Den/Fil	No Turn Skeins	2½ Turn Cones	5 Turn Cones
9610	50/30	$1.39	....	$2.14
9650	70/45	1.29	$1.64	....
9660	100/60	....	1.48	....
1545	150/90	....	1.25	....
9720	200/120	....	1.20	....
9730	285/135	....	1.10	....
9792	450/225	....	1.10	....
9814	600/372	....	1.07	....
9837	940/372	....	.97	....

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

Long Type A

Code	Den/Fil	1½" Turn Cones	2½ Turn Cones	5 Turn Cones
9690	150/135	....	$1.25	$1.30
9739	290/135	....	1.05	1.10
9781	460/372	....	1.05	1.10
9816	600/372	....	1.02	1.07
9827	900/372	....	.95	1.00
9877	1180/372	$.95	....	1.00
9926	2500/744	.95	....	1.00

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9697	150/135	3½	1.30
9747	275/225	3½	1.20
9798	450/372	2½	1.10
9823	600/372	2½	1.05
9847	960/372	2½	.97
9885	1290/372	1½	.95
9934	2680/744	1½	.95
9964	4750/1488	1½	.95

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9789	300/224	3½	1.40
9807	600/405	2½	1.20
9840	900/450	2½	1.10

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices

Effective December 4, 1956

Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Skeins: Weaving Cones	Beams	Long	Short	Cakes	Knitting Cones
50/18	E	5 S						1.56
50/20	B	2.5 S&Z					1.45	
75/10	B	3 S&Z					1.08	
75/18	E	4 S						1.22
75/30	B	2.5,4S&Z	1.17	1.17			1.08	1.17
75/30	B	8 S	1.22			1.37		1.22
75/45	P,E	2.5, 4,5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B,P	3,4 Z	1.22				1.10	1.22
100/14	B,P	3 S&Z				1.12	.96	
100/40	B,E	12 S						1.27
100/40	B,P,E	4,5 S&Z					.96	1.04
100/40	B	6 S	1.10					
100/40,60	B,P	2.5,4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06			.98	
125/40	E	3 Z						.96
150/40	B,P,E	2.1,3S&Z	.91	.91	.94	.99	.86	.90
150/40	B,E	5 S&Z	.91		.94	.99	.86	
150/40	B,E	8 S&Z	.97		1.00	1.05		
150/40	B,P	10 S&Z	1.03	1.03				
150/90	B,E	2.1 S&Z	.92	.92			.87	
200/40	P	3 Z						.82
200/40	B,P	8 S				.95		
250/60	P,E	2.4 Z						.75
300/50	B,E	3 S	.73	.73				
300/60,120	B,P,E	2.1 S&Z	.73	.73		.76	.71	.73
300/60	B	3.5 S	.73	.73		.76	.71	
300/60	B	4.3 S	.76	.76			.74	
300/60	B	7 S	.83					
300/40,120 H.T.	B	2.5, 3,4S	.75	.75				
450/80	B	3 S	.70	.70		.72	.68	
600/80,120	B,E	3 S	.69	.69			.67	
900/120	B	3.4 S	.68				.66	
900/120 H.T.	B	3.6 S	.70				.68	

"Jetspun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39		All
150/40	Regular	2.1S	1.26	1.26		All
200/40	Regular	8.3S	1.27			All
450/80	Regular	3.0S	1.05			All
300/40	High	3.4S	1.10	1.10		All
600/80	High	3.4S	1.06			All
900/120	High	3.4S	1.05	1.05		All

Registered trade mark of American Enka solution dyed rayon yarn.

* Single color.

"Skyloff"

American Enka's Lofted Filament Rayon Yarn
Natural and Jetspun (R)
Types Available and Prices

Denier	Den/Per Filament	JETSPUN Natural	JETSPUN Black	JETSPUN Other Colors
2200	15	$.62	$.72	$.79
2700	15	.60	.70	.77
4300	8	.59	.69	.76
5300	15	.58	.68	.75

American Viscose Corp.

Effective December 14, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.59	$1.56	$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	....
2700	150	Bright	....	.70	.68	....

Extra Turns Per Inch

75	30	Bright 6-Turns	$1.36	$1.32	$1.29	$ ....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
200	44	Bright 6-Turns	....	.95	.92	....
300	15	Bright 5-Turns	....	....	.78	....
300	44	Bright 6-Turns	....	.86	.83	.81
600	30	Bright 5-Turns	....	.76	.74	.72

Translucent Fabric

Herculite Protective Fabrics has developed a new fabric, Herculite F36 Clear, a double lamination of tough vinyl plastic over a mesh of Fortisan 36. The company reports the lightweight, acid-resistant fabric will allow natural light to flood a working area, will eliminate entry of foreign matter and afford protection from the elements. It is waterproof, fire-resistant, rot and mildew-proof. *For further information write the editors.*

Dynel Cleaning Fabric

A vacuum cleaner attachment, designed to make dusting of venetian blinds easier, is equipped with a duster cloth of deep pile fabric of Dynel, Union Carbide's acrylic fiber. The device slips quickly over the hose of almost any popular vacuum cleaner without special adaptors. The manufacturer reports that the Dynel pile fabric efficiently removes every trace of dust. *For further information write the editors.*

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF MODERN TEXTILES MAGAZINE published monthly at Manchester, New Hampshire for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Alfred H. McCollough, 303 Fifth Ave., New York 16, N. Y.
Editor, Jerome Campbell, 303 Fifth Ave., New York 16, N. Y.
Managing editor, H. George Janner, 303 Fifth Ave., New York 16, N. Y.
Business manager, H. J. Williams, 303 Fifth Ave., New York 16, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. It not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)
Rayon Publishing Corp., 303 Fifth Ave., New York 16, N. Y.
A. H. McCollough, 303 Fifth Ave., New York 16, N. Y.
Harries A. Mumma, 61 Broadway, New York 6, N. Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

A. H. McCOLLOUGH, Publisher
Sworn to and subscribed before me this 12th day of September, 1957.
DORIS P. RATTENBURY
Notary Public, State of New York
No. 24-3211700
Qualified in Kings County
Certificate filed in New York County
Commission Expires March 30, 1959

Eliminate broken filaments on Dope-Dyed Nylon with

STEIN HALL SUPRANYL

Supranyl possesses unusual adhesion properties for dope-dyed yarn where the normal polyacrylic sizes fail to render adequate loom protection against broken filaments. Light amber in color, it is readily removable in the scouring bath.

*Above material extracted from Stein Hall Technical Bulletin. Available on request.

STEIN HALL SUPRANYL*
SPECIFICATIONS:
BASE: Solution of copolymerized organic acids.
VISCOSITY: 800 plus or minus 200 cps. Brookfield at 20°C.
pH: 1
ACTIVE INGREDIENTS: 30% minimum.
COLOR: Clear to light amber.
WEIGHT PER GALLON: 9.6 pounds.
MECHANICAL STABILITY: Very good.
STORAGE LIFE: Minimum 6 months.
APPLICATION:
In the sizing of dope-dyed nylon yarns, Supranyl is diluted with cold or lukewarm water to a 2-7% concentration, depending upon the twist, denier, number of filaments in the yarn, and construction of the fabric to be woven.
Supranyl is the only warp size which adheres properly to dope-dyed nylon and covers the yarn throughout. Supranyl is the only warp size that provides adequate loom protection for dope-dyed nylon as well as natural yarns.
Field tests prove better adhesion for Supranyl than any other dope-dyed filament nylon size. Prove it to yourself. Contact Stein Hall today and our qualified technical salesman will be glad to set up a trial run in your plant.
STEIN HALL
285 MADISON AVENUE
NEW YORK 17, N. Y.

Rayflex Yarns

75	30	Rayflex	$	$	$1.20	$1.11
100	40	Rayflex	....	....	1.07	.99
150	60	Rayflex	....	....	.94	.89
200	75	Rayflex	....	....	.85	.81
300	120	Rayflex	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	120	Rayflex	....	....	.72	.70
600	234	Rayflex	....	....	.71	.69
900	350	Rayflex	....	.72	.70	.68

Super Rayflex Yarns

600	490	Super Rayflex	$	$	$ .78	$ ....
900	720	Super Rayflex	....	....	.77	....

Thick and Thin Yarns

150	40-90	Bright & Dull	$	$	$1.15	$ ....
200	75	Bright & Dull	....	....	1.05	....
300	120	Bright & Dull	....	....	.95	....
450	100	Bright & Dull	....	....	.92	....
490	120	Bright & Dull	....	....	.95	....
900	350	Dull	....	....	1.00	....
920	120	Bright & Dull	....	....	1.00	....

Colorspun Yarns

Currently producing regular and high tenacity at premiums at $.35 per pound.

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective December 14, 1956

Den.	Fil.	Twist		Beams	Cones	Cakes	Non Shrunk Tubes
#40 and #14 Production							
75/30/3	Bright			....	$1.11	$1.03	....
100/40/2Z	"			$.96	....	....	....
100/40/3	"			.98	.96	.91	....
100/40/5	"			....	1.02	.97	....
100/60/3	"			....	.97	.92	....
125/40/2Z	"			.94	.92	....	....
150/40/3	"			.89	.85	.80	....
150/40/2Z	"			.87	....	....	....
150/40/5	"			....	.91	.86	....
150/40/8	"			....	.97	.92	....
150/40/0	"	NS		....	.71	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
150/40/3	Bright			.87	.83	.78	....
150/40/0	"	NS		....	.71	....	....
150/40/2Z	"			.87	....	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
100/40/3	Dull			....	.96	.91	....
100/60/2Z	"			1.00	....	....	....
100/60/0	"			....	.93	....	....
100/60/5	"			1.04	1.02	.97	....
150/40/3	"			.87	.83	.78	$.77
150/40/0	"	NS		....	.71	....	....
150/90/3	"			....	.90	.85	....
250/60/0	"	NS		....	.67	....	....
250/60/3	"			....	.75	....	.70
#52 Thick & Thin Rayon							
150/60/3	Bright			....	1.15	....	....
450/120/3	"			....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders December 7, 1956

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"*	$1.90	$1.90	$1.85
50	20	3		1.63	1.63	
50	20	3	Textile "Cordura"	1.65	1.65	1.60
50	35	3	Textile "Cordura"	1.70	1.70	1.65
75	10	3		1.17	1.20	1.08
75	15	3		1.17	1.20	1.08
75	30	3		1.17	1.20	1.08
100	15	3		1.04	1.07	.96
100	40	3		1.04	1.07	.96
100	60	3	Bright	1.04	1.07	.96
100	60	3	Dull	1.06	1.09	.98
125	50	3		.96	.98	.90
150	40	3		.91	.92	.86
150	60	3		.91		
150	60	3	Textile "Cordura"	.92	.93	.87
150	90	3	Dull	.92	.93	.87
150	100	3	Dull	.92	.93	.87
200	35	3		.82	.84	.78
200	20	3		.82		
300	50	3.5		.73	.76	.71
300	120	3	Textile "Cordura"	.74	.77	.72
450	72	3		.70	.72	.68
600	96	3		.69	.71	.67
600	240	3	Textile "Cordura"	.70	.72	.68
900	50	3		.68	.70	.66
900	144	3		.68	.70	.66
1165	480	3	Textile "Cordura"	.68	.68	.65
1800	100	3		.68		
2700	150	3		.68	.70	
5400	300	3		.75		

Thick and Thin

100	40	3	#7	1.38		1.38
150	90	3	#7	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32		1.32
1100	240	3	#60	1.00		1.00
2200	480	3	#60	.95		.95

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	2.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright intermediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright		.70	.70		
600	90	1.5 "S"	Bright		.69	.69	.69	.69
900	50	2.0 "S"	Bright		.68	.68	.68	.68
900	150	1.5 "S"	Bright		.68	.68	.68	.68

Luster #4 is semi-dull.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Twist	Cones Knitting* Cones	Cones No Twist Knitting Cones	Cones Beams, Tubes** and Weaving Cones	Untreated Cakes
	75/30	3.5			$1.17	$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal	75/30	20			1.40	
Strength Yarns	100/40/60 Brt.	3.5			1.04	.96
NARCO	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	$.90		.91	.86
	150/42	0		$.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High Strength Yarns Hi-NARCO	300/75	3			.74	

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.
Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
Prices subject to change without notice.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective November 1, 1956

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.54

Textile News Briefs

Elect New Directors

Mitchell-Bissel Co., Trenton, N.J., has announced the election of William F. Fuetterer and James B. Hassall as directors of the company. Fuetterer also has been named secretary of the company and Hassall assistant secretary.

Celanese Market Unit

Creation of a Textile Market Relations Department by Celanese Corp. of America has been announced by Peter H. Conze, director of Celanese Textile Marketing. H. W. Vervoort heads the new department with V. H. Fazio as his assistant. Celanese said establishment of the new unit was in line with the firm's policy of working with and helping support customers at all levels of distribution.

Roy & Son Expands

B. S. Roy & Son Co., Worcester, Mass., manufacturers of precision textile grinding equipment, has announced completion of its Gastonia, N.C., plant. New machinery and personnel have been added to the Gastonia operation so that all major grinding requirements for the southern textile industry can be handled at that plant.

Mylar Film Price Cut

Du Pont has reduced the price of most types of its "Mylar" polyester film by 25 cents a pound. The reduction applies to all coated and heat shrinkable types of Mylar, and to types A and D in all gauges. The cut brings the price of Mylar in the range of $2 a pound for most heavy gauges to $4 a pound for the exceptionally thin 25 gauge type C film. This is the fourth successive price reduction since the start of commercial operations at the firm's Circleville, Ohio, plant three years ago.

Textile Scholarships Awarded

Textile study scholarships, of $500 each and from funds established by Alliance Color & Chemical Co., Newark, N.J., and Blackman-Uhler Co., Spartanburg, S.C., dyestuff manufacturers and divisions of The Andover Co., have been awarded to the following:

At Alabama Polytechnic Institute, Reupert A. McDaniel, Jr.; at Clemson Agricultural College, Kenneth G. Jordan and Harry H. Perkins; at Lowell Technological Institute, Robert C. Schiek; at North Carolina State College, Victor H. Garrou, and at Philadelphia Textile Institute, Stanley Cear.

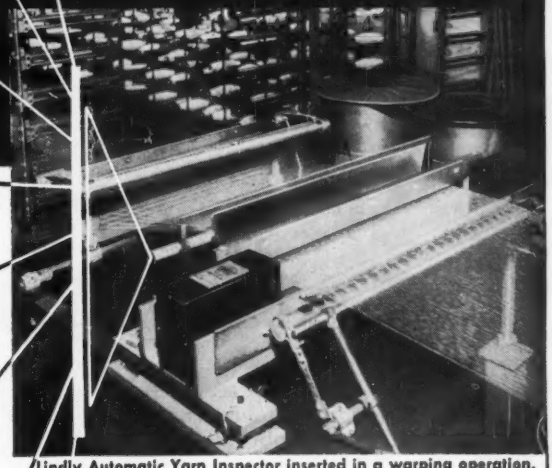
100% INSPECTION

Lindly *automatic* yarn inspector

guarantees the relative quality of warped yarn for warp knitted cloth or woven cloth fabrics by establishing **The Lindly Count.**

Accurately and economically, the Lindly Automatic Yarn Inspector detects yarn faults. Similarly, it sets up a count or stop motion on those faults that are larger than your operation will permit.

YOU DETERMINE QUALITY . . . AND YOU CAN STATE THAT QUALITY IN TERMS OF THE LINDLY COUNT.



Lindly Automatic Yarn Inspector inserted in a warping operation.

OTHER FEATURES—Improve quality through controlled tension during warping . . . improve quality of finished woven or warp knitted fabrics . . . assure more even dyeing.

FOR FULL INFORMATION ON THE LINDLY AUTOMATIC YARN INSPECTOR, WRITE OR CALL FOR LITERATURE . . . AND USE THE LINDLY ADVISORY SERVICES WITHOUT OBLIGATION.

It Pays to Know The Lindly Count

LINDLY & COMPANY, Inc.

248 HERRICKS ROAD • MINEOLA, NEW YORK

American Viscose Corp.

Effective November 1, 1956
Revised June 10, 1957

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1100	490	0	$.63	$.63
1100	490	4.1Z	.63	....
1650	980	0	.58	.58
1650	980	4.1Z	.58	....
2200	980	0	.57	.57

Tire Yarn

1100	490	2.5Z	.59	....
1650	980	0	.55	.55
1650	980	3.6Z-4.1Z	.55	....
2200	980	0	.54	.54

High Strength

1150	490	2.5Z	.59	.59
1230	490	3.1Z	.59	.59
1650	980	4Z	.55	.55
1875	980	4Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

	Tire Yarn	Super Rayflex
1100/490/2	$.69	$.73
2200/980/2	.625	.655

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

* Production Factor

525	Open	Carcass	$.635	$.665
300	490	Top Ply	.645	.675
115	275**	Breaker	.67	.70

* Determined by dividing total ends by picks.

** Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect
Terms: Net 30 days.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "
60/2.5/80 Olive Green—Spun Dyed—OG106		4 lb. Cones	3.50 lb.

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with shipments April 17, 1957

"Super Cordura"*

Den Fil	Turns/In	All Packages
1100-480	2	$.63
1100-720	2	.63
1200-720	2	.63
1250-480	2	.63
1530-960	2	.61
1600-960	2	.58
1650-720	2	.58
1650-1100	2	.58
1800-1100	2	.58
1900-720	2	.58
2200-960	2	.57
2200-1440	2	.57
2400-1440	2	.57
2450-960	2	.57

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective November 1, 1956

Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55	....	.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO

		Twist	Cones	Beams
1650	720	3Z		$.55
1850	720	3Z	$.55	
Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices
Effective December 21, 1956

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

* Standard Twist 2¢ additional.
Terms: net 30 days.

Celanese Corp. of America

Current Prices
Effective December 20, 1956

Bright and Dull

	Intermediate Twist				Spinning Twist		
Denier and Filaments	4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Cones	Beams	0 Twist Tubes
45/13	$1.17	$1.18	$....	$....	$....	$1.12	$....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....	....	....	.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	....
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	....
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes ..... .76
55/0/15 Dull Tricot Beams ..... .985
2-Pound Cheeses ..... .01 Less Than 4-Pound Cheeses
2-BU and 4-Bu Tubes ..... Same Price as 4 and 6-Lb. Cones
2-Lb. Twist Tubes ..... .01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Celaperm Filament Yarn Prices

	Intermediate Twist		Spinning Twist	
Denier and Filaments	4 & 6-Lb. Cones	Beams	Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

New P. R. Sweater Plant

Ess Arr Mills, Inc., has set up a new sweater knitting plant in Manati, Puerto Rico. The company will manufacture hand-fashioned sweaters in a 11,500-square-foot building leased from the Puerto Rico Industrial Development Co., a Government agency. An initial work force of 43 is planned, with an anticipated first year production of $300,000.

New Fabricating Plant

A new fabricating plant to serve the 11-Western state area has been placed in operation at Los Angeles, Calif., by National Vulcanized Fibre Co. Equipped to fabricate all of National's plastics, including laminates, nylon and vulcanized fiber, the new facility will increase the company's overall fabricating capacity by more than 10%.

Other fabricating plants are located in the company's headquarters city of Wilmington, Del., and in Chicago, Ill., Johnson City, N.Y., and Toronto, Canada.

Celanese Seal for Tricot

Beaunit Mills, Inc. is the first company to be approved by the Celanese Corp. for participation in the Celanese safeguard seal program, Beaunit announced. This new quality-control plan applies to Beaunit production of acetate tricot fabrics of 5.75 square yards per pound finished yield and better, and means that such cloths will be impartially checked for specified quality standards in the Celanese laboratory at regular intervals.

Kimberly Making Kaycel

Kimberly Clark Co. reported it is making small commercial runs of Kaycel, a non-woven fabric, for Williamson-Dickie Manufacturing Co., Fort Worth, Tex. The Texas company is using the disposable material in a laboratory coat and a two-piece coverall. The paper product is an outgrowth of Kimberly Clark's Kleenex, the disposable handkerchiefs, paper napkins and paper towels.

Stedco-Southern's Sales

Stedco-Southern, Inc., Greensboro, N.C., has announced that sales and servicing of its automatic loom bobbins and other allied products are now handled exclusively by the Steel Heddle Mfg. Co. sales organization. Steel Heddle maintains general offices at 2100 West Allegheny Ave., Philadelphia 12, Pa., with manufacturing plants and sales offices in Lawrence, Mass.; Greenville, S.C.; Atlanta, Ga., Philadelphia and Granby, Que., Canada.

Textile Research Reports

The following three reports on textile research and development for the Armed Forces can now be obtained from the Office of Technical Services, U. S. Department of Commerce, Washington, D. C.:

"Development of Non-Critical Substitutes for Wolverine Fur," Order No. PB-121772, 207 pages, $3.50 per copy;

"Development of Dacron Parachute Materials," Order No. PB-121793, 168 pages, $4.25 per copy, and

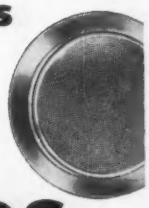
"Evaluation of Fungus Resistance of Cotton Thread Treated With Selected Fungicidal Formulations: Supplement 1," Order No. PB-121804, 22 pages, 75 cents per copy.

Furniture Fabric Data

Specifications for finished paper fiber fabrics, finished woven saran fabrics and finished colored rayon fabrics used in automobiles and outdoor furniture have been published in booklet form by the Monofilament Automotive and Outdoor Furniture Fabric Weavers Group of The National Federation of Textiles, Inc. The booklet includes descriptions of test methods, inspection specifications, definition of defective material, defect allowances, definition of quality classifications and inspection conditions. *For free copies, write the editors.*

superior

manufacturing techniques assure superior precious metal

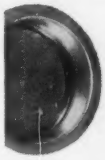


spinnerettes

The grain characteristics, hardness, corrosion resistance, hole and surface finish of Baker Precious Metal Spinnerettes reflect the superior care taken in their manufacture, plus Baker's vast experience in alloying precious metals.

Among the full range of alloys available is the Rhodium-Platinum (90% Pt. and 10% Rh.) which has gained universal recognition and acceptance. Its fine performance in encrustation reduction and maintenance of hole and surface finish results in the production of higher quality yarns.

Baker's masterful production techniques and integrated operation result in stringent supervision at each manufacturing phase—melting, alloying, rolling, cup-forming. The product is a spinnerette which offers maximum performance and protection against mechanically inflicted damage and chemical corrosion.



In addition to Precious Metal Spinnerettes, Baker can supply Stainless Steel Spinnerettes with similar high quality workmanship that offer rigidly controlled hardness and grain characteristics. They provide mirror-like finish throughout the hole, an extremely sharp hole edge and a surface finish that offers maximum protection against corrosion.

Write for our catalog "Spinnerettes For Synthetic Fibers".

BAKER PRECIOUS METALS — BAKER & CO., INC.

113 Astor Street
Newark 5, New Jersey

NEW YORK • SAN FRANCISCO
LOS ANGELES • CHICAGO

ENGELHARD INDUSTRIES

Effective March 11, 1955

Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Bms.
45-13	$1.03	$1.11		$1.12			$1.17	$1.18
55-18	.925	.985		.99			1.04	1.05
55-24	.925	.985		.99			1.04	1.05
75-24	.84	.94	.94	.95		$.98	1.00	1.01
75-50				.97		1.00	1.02	1.03
100-32	.81		.89	.90		.93	.95	.96
120-50	.77	.80	.80	.81		.85	.86	.87
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-160			.62	.63	.65	.65	.65	.66
900-44	.61		.62	.63	.63	.63	.63	.64
900-240			.62	.63	.63	.63	.63	.64
1800-88			.60	.61	.61	.61	.61	.62
2700-132			.60	.61	.61	.61	.61	.62
3000-210					.61	.61	.61	.62

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28	$1.28	1.29	1.32	1.32	1.34	1.35
100-32	1.14		1.22	1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-60	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08	$1.08	1.09		1.12	1.14	1.15
100-32	.94		1.02	1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Specialty Yarns

Type 20	Same Price as Regular Yarn
Type C	Same Price as Regular Yarn
	$1.39

Thick & Thin

Denier & Filament	Natural Cones	Beams	Black Cones	Beams	Color-Sealed Cones	Beams
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Tubes	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.92½	$.99	$.98½
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .31
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.32
8.0 & 15.0 Deniers	.33
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.33

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.32
9.0 Denier Per Filament	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65

Prices of other descriptions on request.

Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.32
8 D.P.F.	.34

Courtaulds (Alabama) Inc.

Effective August 22, 1957

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.31	$.31
Available in 1½", 1-9/16" and 2".		

Crimped Rayon Staple

3 and 5½ denier	$.32	$.32
Available in 1-9/16" and 3".		
3 denier		.32
Available in 2".		

9/11/57

Dacron Hang-Tag Program

Du Pont has initiated a hang-tag program to permit ready consumer identification of underclothing insulated 100% with Dacron polyester fiberfill. Hang tags will be available to participating manufacturers who qualify for the program. Continuing tests will be conducted to assure that the insulation in garments carrying the tag is 100% Dacron polyester fiberfill. Its resilience and low moisture regain, according to Du Pont, has shown fiberfill to be superior for use in "insulated underwear."

Sales Agent Named

National Vulcanized Fibre Co., Wilmington, Del., has opened a new district office to serve the textile industry in Florida. Alex Corbett, Jr. and Associates, 2411 Covina Way South, St. Petersburg, Fla., has been appointed district representative covering all of Florida south and east of the counties of Hamilton, Suwanee, Lafayette and Dixie.

Handbook of Ornament

Dover Publications, Inc., has reprinted Franz S. Meyer's "Handbook of Ornament" The volume, priced at $2 a copy, reviews the artistic ornamentation from Greek, Roman, Medieval European, Islamic, Renaissance, Baroque, and early 19th Century origins. All copyright is free; illustrations may be used and reproduced without permission, without required payment, the publishing house reported.

For further information write the editors.

Personnel Notes

Walter M. Gaston has been appointed production manager of American Enka Corp.'s rayon filament plant.

Harold G. Shelton has been appointed director of marketing for the Dyestuff & Chemical Division of General Aniline & Film Corp.

Charles E. Hollis has joined the sales staff of Roberts Company, Sanford, N. C.

W. Richard Cake has been appointed general manager of Alliance Color & Chemical Co., a division of the Andover Co.

Frederick P. Boehm has been appointed manager of the Pittsburgh sales branch of Allied Chemical & Dye Corp.'s Solvay Process Division. In the National Aniline Division **Neal M. Draper** has been appointed assistant to the executive vice president.

Seymour Berman has joined Sidney Bertner Co. to head the synthetic filament division. **Bernard Bertner** has become President of the company, succeeding **Sidney Bertner** who has left to establish the firm of Bertner Bros., Inc.

Roy H. Niebling has been elected president of Sidney Blumenthal & Co., Inc., succeeding **William Heller.**

L. L. Froneberger, Jr. has been appointed sales manager for Bullard Clark Co.'s E. H. Jacobs Northern and Southern Division.

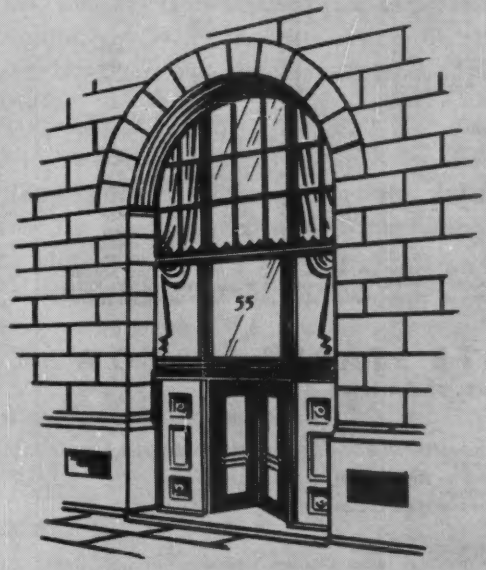
Harry O. Rohrer and **Irving Layton** have been appointed vice presidents of Pacific Mills.

R. D. Padgett

Ralph D. Padgett has been elected vice president in charge of technical service for Roberts Co.

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



Textile Banking Company

55 Madison Avenue, New York 10, N.Y.

Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

Subsidiaries:

T. B. C. Associates, Inc., New York Southwest Texbanc, Inc., St. Louis

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-1/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Mocha	7704	7719	7725	39¢
Dark Brown	8604	8619	8625	40¢
Ecru	7904	7919	7925	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Nugget	2304	2319	2325	44¢
Apple Green	5104	5119	5125	45¢
Aqua	4704	4719	4725	45¢
Rose	5804	5819	5825	45¢
Sage	5304	5319	5325	45¢
Crystal Blue	3904	3919	3925	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Dawn Pink	5904	5919	5925	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1-12 den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2" (1423)
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 6" (1425)

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

VISCALON 44	1.5 denier Bright 1½" and 2"	Withdrawn
	15 denier 3" Dull	Withdrawn
VISCALON 66 (Crimped)		
	8 denier 3" Bright	33¢
	15 denier 3" Bright	33¢
	15 denier 3" Dull	33¢

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	....
Sandalwood	45¢	45¢	....
Nutria	45¢	45¢	....
Sea Green	45¢	45¢	....
Mint Green	45¢	45¢	....
Champagne	45¢	45¢	....
Cafe Brown	55¢	....	55¢
Midnight Black	45¢	....	45¢
Gold	48¢	48¢	....
Turquoise	45¢	45¢	....
Melon	48¢	48¢	....
Capri Blue	45¢	45¢	....
Charcoal Grey	45¢	45¢	....
Coco	46¢	46¢	....
Sable	47¢	....	47¢
Tangerine	58¢	....	58¢
Chinese Red	59¢	....	59¢
Larkspur Blue	45¢	45¢	....
Royal Blue	55¢	....	55¢
Lemon Peel	46¢	....	46¢
Kelly Green	46¢	....	46¢
Bitter Green	55¢	....	55¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
3, 5.5 & 8 Denier (Regular Crimp or High Crimp)	$.34
2, 12 & 17 Denier (Regular Crimp or High Crimp)	.35
35 Denier	.38
50 Denier	.40
Type F — 5.5, 8, 12, 17 Denier	.35
Type K — (Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (premium)
Variable Acetate Fiber	.32
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.27*

Tow (Celatow)

3, 5.5 & 8 Denier	$.36
2, 12 & 17 Denier	.37
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point).

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb	2nd Grade Price/Lb
200	32	¾	Z	B	Bobbin	$1.49	$1.44
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	½	Z	HBT	Aluminum Tube	1.30	1.20
840	136	½	Z	HBT	Beams	1.30	1.20
Heavy Yarn						**Price/Lb.**	
2100	408	0	O	HB	Paper Tube*	$1.27	
2100	112	0	O	HB	Paper Tube*	1.30	
2500	408	0	O	HB	Paper Tube*	1.27	
3360	544	0	O	HB	Paper Tube*	1.26	
4200	680	0	O	HB	Paper Tube*	1.26	
4200	224	0	O	HB	Paper Tube*	1.29	
5000	816	0	O	HB	Paper Tube*	1.25	
5000	280	0	O	HB	Paper Tube*	1.28	
5800	952	0	O	HB	Paper Tube*	1.25	
7500	1224	0	O	HB	Paper Tube*	1.24	
10000	1632	0	O	HB	Paper Tube*	1.24	
15000	2448	0	O	HB	Paper Tube*	1.23	

Terms—Net 30 days.

Prices subject to change without notice.

All prices quoted F.O.B. Shipping Point.

Following are invoiced as a separate item.

Bobbins—45 cents each.

Aluminum Tubes—40 cents each.

Beams—$220.00 each.

Cradles for Beams—$53.00.

B—Bright.

H—High Tenacity.

T—Heat Stabilized.

* Paper Tubes non-returnable, no charge.

** Type is used to describe luster and tenacity

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective June 1, 1957

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	Semi-dull	Normal	Pirn	1 lb.	$5.25	$5.00
15/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	5.50	5.25
15/1	0.5Z	Dull	Normal	Pirn	1 lb.	5.30	5.05
20/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	4.60	4.30
30/6	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	Semi-dull	Normal	Pirn	2 lb.	1.91	1.76
200/16	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	Normal	Beam	....	1.54	....
200/34	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	Normal	Beam	....	1.54	....

Pirns charged at $.25 or $.45 each, depending upon type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.81
40	13	Z	D	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	....
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

Prices subject to change without notice.

T. C. Clawson has been named assistant sales manager of the central division office of Corn Products Sales Co. in Chicago. In the same company **J. E. Andrews** has been named branch manager at Fort Smith, Arkansas.

A. Bagian

Albert Bagian has joined Turbo Machine Co. to direct the sale of Smith-Drum Machines. Prior to his appointment, Mr. Bagian had been associated with Smith-Drum for 12 years.

H. B. Askew has been appointed representative for National Ring Traveler Co. and Sterling Division in Georgia and Alabama.

Louis S. Goldberg has joined the Customer Service Department of the Textile Division of Onyx Oil & Chemical Co. In the same division **Rodney H. Harm** has been appointed sales representative for the Piedmont region, and **Clarence E. Pickard,** for the South Carolina and southern part of North Carolina regions.

Richard D. Riedell has been appointed regional representative of textile sales for Reynolds Metals Co. with headquarters in New York.

James W. Lederer was named head of the new southern office of Richmond Oil, Soap & Chemical Co., Inc.

J. W. Stanley

Jack W. Stanley has been appointed a southern sales representative of Curtis & Marble Machine Co.

E. Kent Swift, Jr., vice president, has been elected first vice president of Whitin Machine Works and **John H. Bolton, Jr.** has been named director of sales.

H. Dorsey Lanier has been appointed Georgia-Alabama representative for Watson & Desmond, succeeding Hugh K. Smith.

Philip G. Lovell has retired from the vice presidency of the Fairfax Department of Wellington Sears Co. Succeeding him is **Donald W. Hawley.**

Harold B. Ackerman and **Charles G. Flynn** have been given posts in the merchandising, advertising and promotion department of The Chemstrand Corp. **Norman Thurnauer** has been appointed leader of a newly-established group in the fiber development department of the company's Research and Development Division. **J. E. Bromley** has been promoted to the position of methods and standards superintendent, succeeding **Dan C. Doulet.**

Ch. G. Flynn H. B. Ackerman

NON-FLUID OIL
TRADE MARK REGISTERED

THE LEADING LOOM LUBRICANT

NON-FLUID OIL has been adopted as the standard loom lubricant by the majority of mills because its use enables them to secure greatest output of perfect goods.

NON-FLUID OIL prevents "oil spot" losses caused by dripping, leaking oil that gets on warps and woven goods. By providing dependable lubrication until completely used up, NON-FLUID OIL keeps looms in steady operation—increasing production and reducing maintenance costs by outlasting ordinary oils and thin greases many times.

Grades for oil can or pressure application. Write today for your free testing sample and instructive Bulletin T-20.

NEW YORK & NEW JERSEY LUBRICANT COMPANY
292 MADISON AVE., NEW YORK 17, N. Y.
WORKS: NEWARK, N. J.
So. Dist. Mgr.: Lewis W. Thomason, Jr. Charlotte, N. C.

1898 61 YEARS OF LUBRICATION SERVICE TO INDUSTRY 1957

WAREHOUSES

Birmingham, Ala. Atlanta, Ga. Columbus, Ga. Charlotte, N. C.
Greenville, S. C. Chicago, Ill. Springfield, Mass.
Greensboro, N. C. Detroit, Mich. Providence, R. I. St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	....
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	....
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Tricot Bms.	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Tricot Bms.	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.81
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.81
40-13	0.5Z	680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
90-44	0.5Z	200	Bobbin	1.86	1.76
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	309	Beam	1.54	....
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
70-34	0.5Z	140	Bobbin	$2.06	$2.01
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn				Price/Lb.
2520-420	0	300/700	Paper Tube	$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 209—Semidull, normal tenacity.
Type 300—Bright, high tenacity.
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 670—Dull, normal tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-14	0	Bright	55	$2.81
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	$2.01
70-14	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	$1.94
140-28	0	Bright	55	1.89
150-34	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	$1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each.
All tubes are returnable for credit.
* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

NON CELLULOSIC STAPLE & TOW ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

Effective October 1, 1957

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dul and Bright staple & tow	$1.24	$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.16	1.16
3.0 denier Bright & Semi-dull staple & tow	1.16	1.16
5.0 denier Bright & Semi-dull staple & tow	1.16	1.16
8.0 denier Bright & Semi-dull staple	1.16	1.16
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective October 1, 1957

Dynel Staple & Tow

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	$1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors: Whitened, Blond, or Gray	
3, 6, and 24 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3, 6, and 24 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 Bulking Fiber (3 Denier only)	Add $.05 per lb. to above prices

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	$1.48
2.0 Denier Semidull & Bright	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.20
6.0 Denier Color-sealed Black	1.55
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000
Staple Lengths—1½", 2", 2½", 3", 4½"
High Shrinkage Staple same price as Regular Staple

Type 39 $1.06

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A $1.14

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B $1.01

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 15, 1956

"Verel"*

Deniers	Dull and Bright
2, 3, 5 and 8	$1.10 per pound

Prices are subject to change without notice.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.
* "Verel" is a trade-mark of the Eastman Kodak Co.

Rings are not a sideline here — they are our MAINLINE to an 84-year success in "Doing One Thing and Doing It Well".

You get the most experienced ring advice and the world's most complete line of rings from DIAMOND FINISH.

WHITINSVILLE (MASS.) SPINNING RING CO.

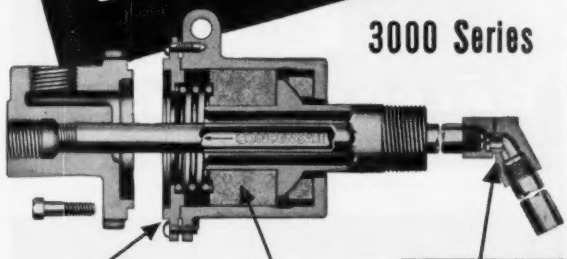
DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
For Ala., Ga., & Tenn.: P. C. EVERETT, 369 Meadowbrook Dr. NE, Atlanta

Johnson Joint with SYPHON ELBOW

3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

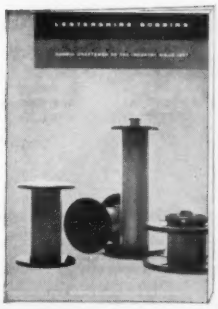
SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

844 Wood St., Three Rivers, Mich.



NEW BOBBIN MANUAL

Only complete, authoritative bobbin guide in the industry

"Most useful book on bobbins ever written!" That's how users describe Lestershire's new Bobbin Guide.

Actually, this new Manual is far more than just a catalog. It's an authoritative reference—a complete guide to easy bobbin selection—prepared by the manufacturer of the most complete line of precision bobbins for industry.

Twelve full pages are packed with just the data you need: diagrams and descriptions of basic bobbin types—details of materials and construction—illustrations and information on a full range of special spools and bobbins for every spindle, speed and yarn.

A brief note on your business letterhead brings your free copy without obligation of course.

Write direct to Dept.DD.11

LESTERSHIRE SPOOL DIVISION

***NATIONAL* VULCANIZED FIBRE CO.**

WILMINGTON 99, DELAWARE

In Canada: NATIONAL FIBRE COMPANY OF CANADA, LTD., Toronto 3, Ontario

NYLON

American Enka Corp.

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅝	1.20
10	bright	3	1.20
15	bright	3	1.20
15	semi-dull	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1½"—4½"	None made	$1.33	$1.18
1.5	201	1½"—4½"	None made	1.35	1.20
3.0	100/200	1½"—4½"	430M	1.28	1.13
3.0	101/201	1½"—4½"	455M	1.30	1.15
6.0	100	1½"—4½"	330M	1.28	1.13
6.0	101	1½"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	330M	1.20	1.05
15.0	101	1½"—6½"	None made	1.22	1.07
15.0	600	1½"—6½"	330M	1.22	1.07
15.0	601	1½"—6½"	345M	1.24	1.09

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not crimpset.
Type 101 Bright, normal tenacity, crimpset.
Type 200 Semidull, normal tenacity, not crimpset.
Type 201 Semidull, normal tenacity, crimpset.
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.
Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective November 29, 1956

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"* Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1¼"-3"	....	$1.56
1.5	Semidull	54	1¼"-3"	....	1.51
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41

Terms: Net 30 Days.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1956

"Vinyon"® Staple

3.0 denier	½" unopened	$.80 per lb.
3.0 "	1¼" unopened	.80 per lb.
3.0 "	1¼" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3½" opened	.90 per lb.
5.5 "	3½" unopened	.80 per lb.

Terms: Net 30 days.

PROTEIN

Virginia-Carolina Chemical Corp.

Fiber Division

Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

Staple length ½ to 6 in.
Supplied in staple lengths or as continuous tow (270,000 filaments).
Terms: Net 30 days.
Prices f.o.b. Taftville, Conn. on 10% moisture regain basis.

The Borregaard Co., Inc.

Norway House, 290 Madison Avenue
NEW YORK 17, NEW YORK

Norwegian Viscose Rayon Staple Fiber

Bright Sūpral Dull

Sole Agent For United States, Canada, Mexico, Cuba

INDUSTRIAL ENGINEERS
Specializing in Textiles since 1914

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS
SPECIAL REPORTS

RALPH E. LOPER CO.
GREENVILLE, S.C. Dial 2-3868
FALL RIVER, MASS. Dial OSborne 6-8261

SUPR-O-BAND

Spindle Drive Slippage? Improve your operation and quality with SUPR-O-BAND, the new banding for spindle drives on spinning, roving and twisting frames. Proved by mill operations. Write today for full details.

BENJAMIN BOOTH COMPANY
ALLEGHENY & JANNEY STS., PHILA. 34, PA.
Booth

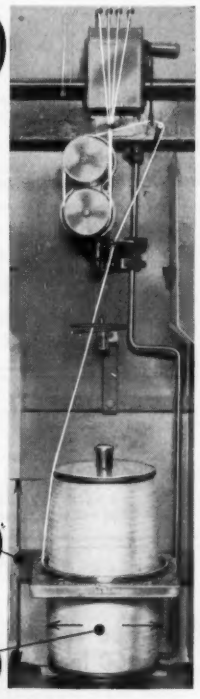
THE NEW

5 POUND

FLETCHER

MASTER
DUPLEX
DOUBLER-
TWISTER

FOR THREE
STYLE
PACKAGES



9"

6"

STRAIGHT

BOTTLE

DOUBLE-
TAPER

THE FLETCHER WORKS INC.

2nd & GLENWOOD AVE.
PHILADELPHIA 40, PA.

Nothing is impossible
unless you have to do it yourself.

We who manufacture

LAMBERTVILLE THREAD GUIDES

can't make a guide that lasts *forever*. We *can* and do produce long wearing dimensionally accurate guides that give the most economical and satisfactory service. Available in white or 'Durablu' finish. Write for catalog and samples.

LAMBERTVILLE CERAMIC
AND MANUFACTURING COMPANY
LAMBERTVILLE NEW JERSEY

TRAPHAGEN SCHOOL
OF FASHION FOR RESULTS

The Training That Pays Lifetime Dividends

AUTHORITY ON FASHION CAREERS

Intensive FALL, WINTER, SUMMER Courses

• TOP HONORS OVER 33 YEARS •

Professional methods for beginners or advanced students. Full Day courses or optional classes, in Fashion Drawing, Illustration, Life Drawing, Design, Forecasting, Stage, Screen, Textile Design, Fabric Analysis, Fashion Journalism, Teacher Training. Also Clothing Construction, Draping, Pattern-making. Grading, Dressmaking. Approved by Regents. Credit. Free Placement Bur. Sales Dept. for Students' work. Children's and Juniors' Saturday Morning Drawing Classes. Not the Most Expensive—But the Best.

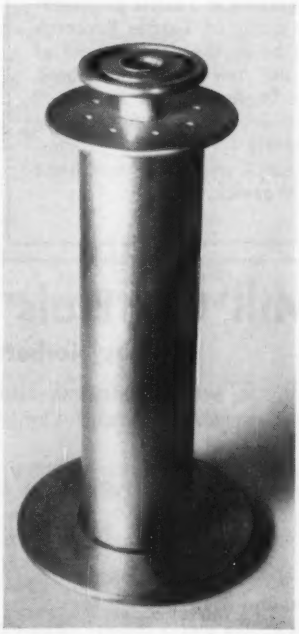
Evening and Saturday Classes Parallel Day Courses. Interior Decoration and Display in Minimum Time.

Our Students in Demand

Investigate Before Registering Elsewhere
Write for Circular G or phone CO 5-2077

TRAPHAGEN SCHOOL OF FASHION
1680 Broadway at 52nd Street, New York 19, N. Y.

N E W



LOW COST
ALUMINUM
TWISTER
BOBBIN

New aluminum twister bobbin of high strength will not warp or fail despite repeated steamings of highest strength nylon yarns. Of two pound capacity, this new bobbin is dynamically balanced and anodized against corrosion yet is less costly than ordinary bobbins. Spindle guide tube goes all the way through. Grip knob with identification ring simplifies handling without need to touch yarn. Available in a variety of sizes. Write for details today.

BW MACK ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

CLASSIFIED RATES
Per Inch
2 columns to the page, each column 8 inches deep

1 Inch	$8.00
2 Inches	15.00
3 Inches	22.50
4 Inches	28.00
5 Inches	35.00
6 Inches	42.00
7 Inches	49.00
8 Inches	52.00

CONFIDENTIAL EMPLOYMENT SERVICE
If you are available for a good paying position in textiles, it will pay you to have your application in our files. Negotiations are confidential. No fee to be paid unless you accept employment through us.
CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Phone: Liberty 2-6547
CONFIDENTIAL EMPLOYMENT SERVICE
Over 55 Years in Business

DACRON — NYLON — RAYON
AND ALL OTHER YARNS
BOUGHT & SOLD
The Yarn Exchange Co.
358 Fifth Ave., N. Y.1, N. Y. BRyant 9-9288

DACRON, NYLON, RAYON
& ACETATE
BOUGHT AND SOLD
YARNS
SIDNEY BERTNER COMPANY
Empire State Bldg. New York City
Oxford 5-1170

POSITION AVAILABLE
Immediate opening for a graduate Textile Technologist with 2-5 years experience in textile application development. Position involves appraisal of market potential of new fibers by interpretation of laboratory data and evaluation at mill and consumer levels. Please send resume of education, experience, references and salary requirements to:
UNION CARBIDE CHEMICALS COMPANY
South Charleston 3, West Virginia Attn: Mr. W. H. Billings, Jr.

INDUSTRIAL SITES FOR SALE
Three lots, sizes 11, 14 and 18 acres, within the Corporate limits of the town of Saluda, South Carolina; details furnished upon request.
Butler B. Hare
Saluda, S. C.

WANTED
Wanted to buy one range of offset dry cans 60 inches or wider in good condition. Give full description.
Reply to Box 781, Modern Textiles Magazine
303 Fifth Ave., NYC

TEXTILE ENGINEERS
Openings for Textile Engineers in Textile Engineering and Manufacturing group of Textile Research Laboratories. Work will be in the development of processing techniques on new synthetic fibers. Positions require Textile Engineers with five years experience in processing or weaving of synthetic fibers. Unlimited opportunity for qualified persons. Reply to the Dow Chemical Company, James River Division, P. O. Box 576, Warwick, Virginia.

FABRIC DEVELOPMENT ENGINEER
B.S. or M.S. in engineering or textile engineering to supervise adaptation of synthetic fibers to optimum fabric construction. Engineering degree(s) with approximately 10-15 years experience in fabric design and fabric development required. Reply to the Dow Chemical Company, James River Division, P. O. Box 576, Warwick, Virginia.

Modern Mill Controls . . . .

by Norbert Lloyd Enrick

Here is a new handbook, with illustrated, and live examples of actual applications in Management, Administration, Supervision and Control of Quality, Waste, Production, and Machinery Maintenance.

Modern Textiles Magazine
303 Fifth Avenue
New York 16, N. Y.

$2.00

Orders of 15 or more — 30% Discount
In New York City add 3% City Sales Tax.

Enclosed please find check / money order for ..... copies at $2.00 each plus postage, of "Mill Controls."

Name ..... Company .....

Street Address .....

City ..... State .....

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

CLASSIFIED RATES
Per Inch
2 columns to the page, each column 8 inches deep

1	Inch	$8.00
2	Inches	15.00
3	Inches	22.50
4	Inches	28.00
5	Inches	35.00
6	Inches	42.00
7	Inches	49.00
8	Inches	52.00

TEXTILE CHEMISTS!

The Dow Chemical Company IS INTERESTED IN YOU—

Are You Looking For A New And Challenging Opportunity?

Our new textile fiber plant about completed near Williamsburg, Virginia needs textile chemists. For your future's sake read about these following positions that are among those now available:

TEXTILE AUXILIARIES SUPERVISOR

Bachelor degree or better in chemistry or textile chemistry. Minimum of five years experience with textile auxiliaries and finishing compounds. This experience could be either with textile mills or with auxiliary manufacturers. Should also have fair knowledge of fabric preparation and dyeing. Experience with cellulosics, proteins and synthetic fibers desirable but cellulosic experience is essential.

TEXTILE AUXILIARIES CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Finishing experience desirable but not a specific prerequisite. Must be interested in this type of application.

TEXTILE PRINTING CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Should have had three years or more experience in relation to roller printing on cotton and other fibers. This experience could be with a print works or with chemical or color company servicing the print trade. Must be familiar with formulation and application procedures, both on laboratory and plant scale.

TEXTILE SPECIAL PROJECT CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Experience in a textile plant laboratory desirable but not essential. Should be well trained in both analytical and organic chemistry so as to be able to analyze and solve special chemical problems arising during textile dyeing and finishing.

TEXTILE PROTEIN FIBER CHEMIST

Bachelor degree or better in chemistry or textile chemistry. Should have had two or more years experience with dyeing and finishing woolen and worsted piece goods. Should have good knowledge of types dyestuff used on wool and worsted fabric and means of applying them.

You would work with fine men of high professional calibre in new modern buildings with the best equipment. Beautiful community for family. Pension plan, insurance plan and other liberal benefits with good salary.
You will receive a prompt reply to your inquiry. Please send detailed summary of your education and experience.

Write now to:

TECHNICAL EMPLOYMENT DEPARTMENT
THE DOW CHEMICAL COMPANY
BOX 576 WARWICK, VIRGINIA

Calendar of Coming Events

Nov. 6—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Nov. 14-15—A.I.E.E. Conference on Electrical Applications in the Textile Industry. N. C. State College, Raleigh, N. C.
Nov. 14-16—AATCC National Convention and Exhibition. Hotel Statler, Boston, Mass.
Dec. 4—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Dec. 5—AATT Appalachian Group meeting. Franklin Club, Elizabethton, Tenn.
Dec. 5—AATCC Rhode Island Section, annual meeting. Providence, R. I.
Dec. 6—AATCC Delaware Valley Section, meeting. Kugler's Restaurant, Philadelphia, Pa.
Dec. 6—AATCC Northern New England Section, annual meeting. Hotel Continental, Cambridge, Mass.
Dec. 7—AATCC Southeastern Section meeting. Dinkler Plaza Hotel, Atlanta, Ga.
Dec. 13—AATCC Western New England Section meeting. Rapp's Restaurant, Shelton, Conn.

1958

Jan. 8—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Jan. 30-Feb. 1—American Society for Quality Control, Textile Div., Eighth Annual Conference. Clemson House, Clemson, S. C.
Feb. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Feb. 12-14—1958 Cotton Research Clinic. Pinehurst, N. C.

Index to Advertisers

(*See previous or subsequent issues)

Abbott Machine Co., Inc. 22
Acrometal Products, Inc.
Allentown Bobbin Works, Inc. 101
Allied Chemical & Dye Corp.
National Aniline Div. 37,40,41
Nitrogen Division
Solvay Process Division 9
Althouse Chemical Co.
American Aniline Products, Inc.
American Bemberg 11
American Enka Corp. 17
American Lava Corp. 7
American Moistening Company
American Viscose Corp. 25
Antara Chemicals Div. General Dyestuffs Corp.
Apex Chemical Company, Inc.
Arkansas Co., Inc. 10
Atkinson, Haserick & Co., Inc.
Atlantic Rayon Co.
Atlas Electric Devices Co.

Baker & Company, Inc. 93
Barber-Colman Co. 67
Booth, Benjamin Co. 100
Borregaard Co., Inc., The 100
Butterworth & Sons Co., H. W.

Carter, A. B., Inc. 71
Celanese Corp. of America, Yarn Div. 28
Ciba Company, Inc. 19
Chemstrand Corp.
Cocker Machine & Foundry Co. 65
Collins Supply and Equipment Co.
Columbia-Southern Chem. Corp. 18
Corn Products Sales Co. 57
Cosa Corporation
Courtaulds (Alabama), Inc. 44
Crompton & Knowles Loom Works
Curtis & Marble Machine Co.

Dary Ring Traveler Co.
Davison Publishing Co.
Dayton Rubber Co., The
Denman Textile Rubber Co. 3
Dobson & Barlow, Ltd.
Draper Corporation 2
Du Pont de Nemours & Co., E. I.
Dyestuff Department *
Textile Fiber Department 12,13
Film Department

Eastman Chem. Pro. Inc.
Edda International Corp.
Emery Industries, Inc.
Engineered Plastics, Inc.

Fancourt Co., W. F. 46,47
Firestone Tire & Rubber Co.
Fletcher Works Inc. 101
Foster Machine Co.
Frankl Associates, Ernest L.

Gaston County Dyeing Machine Co. 30
Geigy Chemical Corp. 49
General Dyestuff Corp. 43
Gessner Company, David
Globe Dye Works Co. 87

Hart Products Corp.
Hartford Machines Screw Co.
Hartford Rayon Co., Div. of Bigelow-Sanford Carpet Co., Inc. 6
Hayes Industries, Inc.
Heany Industrial Ceramic Co. 8
Heresite & Chemical Co. III Cover
Herr Mfg. Co., Inc. 75
Hoffman & Co., Inc., Arnold
Hoffner Rayon Co. 29
Howard Bros.

Ideal Industries, Inc.
Industrial Rayon Corp. 23
Instron Engineering Corp.
Interchemical Corp. 14,15

Jacobs, E. H., Northern & Southern Division
Johnson Corp., The 99

Kenyon Piece Dyeworks, Inc. 72
Kidde Manufacturing Co., Inc. 63

Lambertville Ceramic & Mfg. Co. 101
Laurel Soap Mfg. Co.
Leatex Chemical Co.
Lindly & Co., Inc. 91
Loper Company, Ralph E. 100

Malina Company
Marshall and Williams Corp.
McBride Co., Edward J.
Metlon Corp.
Milton Machine Works, Inc.
Mitchell-Bissell Co. 61

Nash, J. M. Co.
National Drying Machinery Co. 53
National Ring Traveler Co.
National Starch Prod., Inc.
National Vulcanized Fibre Co. Lestershire Spool Div. 99
New Departure, Div. of Gen. Motors 66
New England Bobbin & Shuttle Co.
New York & New Jersey Lubricant Co. 97
Nopco Chemical Co. 55

Olin Mathieson Chem. Co.

Penick & Ford, Ltd.
Pneumafil Corp.
Proctor & Schwartz, Inc. 16

Red Ray Mfg. Co.
Reiner, Inc., Robert
Reliable Sample Card Co., Inc.
Riggs & Lombard, Inc.
Riordon Sales Corp., Ltd.
Roberts Company

Saco-Lowell Shops 24
Sandoz Chemical Works, Inc.
Saran Yarn Co.
Sayles Finishing Plants, Inc.
Scholler Bros.
Scott & Williams, Inc. 51
Scott Testers, Inc.
Simco Co., The
Sirrine Co., J. E.
Sonoco Products Co. 20
Southern Shuttle Div., Steel Heddle Mfg. Co. 21
Standard Chemical Products, Inc.
Stanley Works—Magic Door Div.
Stauffer Chemical Company
Steel Heddle Mfg. Co. 21
Stein Hall 89
Synthane Corp. 69
Synthetic Yarns, Div. D. W. Rich & Co., Inc.

Taylor-Stiles & Co.
Tennessee Corp.
Textile Banking Co. 95
Textile Hall Corp.
Timron Development & Mfg. Corp.
Titanium Pigment Corp.
Traphagen School of Fashion 101
Trumeter Co.
Turbo Machine Co.

Union Carbide Chem. Co. Div. Union Carbide Corp. Chemical Dept. 27
Textile Fibers Dept.
United Piece Dye Works, The
U. S. Ring Traveler Co.
U. S. Textile Machine Co. 80
Universal Winding Co.
Uster Corp.

Van Vlaanderen Machine Co.
Veeder Root, Inc. IV Cover
Victor-Ring Traveler Co. 26
Virginia-Carolina Chemical Corp.
Von Kohorn International Corp.

Wallerstein Company, Inc.
Walton & Lonsbury
Watson-Williams Mfg. Co.
West Point Foundry & Mach. Co.
Whitin Machine Works 4
Whitinsville Spinning Ring Co. 99

BUSINESS SERVICE

Charles P. Raymond Service, Inc. 102
The Yarn Exchange, Inc. 102
Sidney Bertner Co. 102
The Dow Chemical Co. 102, 103
Union Carbide Chemical Co. 102
Butler B. Hare 102

HERESITE

REG. U. S. PAT. OFFICE

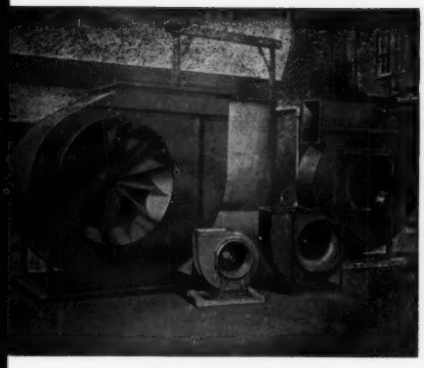
Many Rayon manufacturers have availed themselves of the protection afforded by HERESITE. The unique properties of this coating include chemical resistance and mechanical strength. The general value of HERESITE to the rayon industry is demonstrated by its ability to prolong the life of

Traverse bars and arms . . . Complete cake wash machines . . . Soft water storage tanks . . . Blowers . . . Fume stacks . . . Acid storage tanks . . . Piping . . . Filter presses . . . Storage tanks for wash solutions . . . Centrifuges . . . Vacuum wash tanks . . . Bleaching tanks . . . Adaptors . . . Ductwork . . .

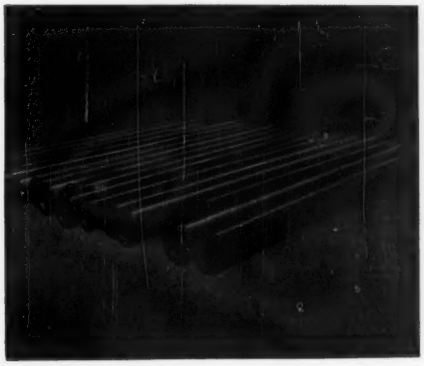
HERESITE Provides

Protection of Metal Machine Parts

Production Free from Contamination



Heresite coated fans and blowers safely exhaust any concentration of acid fumes. The coating resists conditions that would attack even special alloy metals.



Valves, pile lines, pumps, spools, etc. require Heresite protection for long trouble-free service.

Solutions stored in Heresite lined tanks are maintained free from contamination and cannot discolor the spinning bath solution.

HERESITE & CHEMICAL COMPANY

MANITOWOC, WISCONSIN

Eastern Division: 546 South Avenue, Garwood, N. J.

. . . to Modernize Your Mill with New American Textile Machinery . . . NOW

Today, American textile machines of all types are at an all-time high in adaptability of design . . . versatility of use . . . quality and quantity of production.

Never has any textile mill been able to get so much for so little.

And never has competition been so tough. Never has outdated equipment been such a liability, such an open invitation to diminishing returns.

Yet surveys show that a dangerously high percentage of pre-war equipment is still in use today.

What are you waiting for? The time is right. Prices are right. Terms are right. It's high time to modernize, *now* . . . for the future of *your* mill.

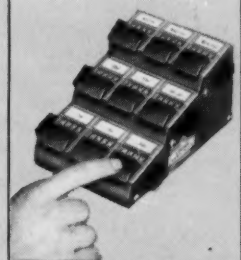
VEEDER-ROOT
INCORPORATED
HARTFORD 2, CONN. • GREENVILLE, S. C.
Chicago 6, Ill. • New York 19, N. Y. • Altoona, Pa.
Los Angeles • San Francisco • Montreal 2, Canada
Offices and Agents in Principal Cities

. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest* Countrol of production and uniformity. Write Veeder-Root for all your counter needs.

2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

Double-Wheel Linear Counter for indicating lengths in feet, yards, etc.